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ART. I. AN EXAMINATION *of the Question, Whether the Climate of the Valley of the Mississippi, under similar parallels of latitude, is warmer than that of the Atlantic Coast?* By LEWIS C. BECK, M. D. of Albany, New-York.

(Read before the Albany Lyceum.)

CLIMATE is a subject which has always excited the deepest interest, and claimed the most profound attention. This will not appear extraordinary, when we reflect how great a portion of our comfort and happiness is dependent on it. Notwithstanding this, it is as yet but partially understood; many of its laws have eluded the most diligent search of philosophers, and remain clouded in obscurity.

The fundamental principle, that the temperature of any climate depends chiefly on latitude or distance from the equator, is in the main correct. But there are also many known and unknown causes by which it is materially affected. Among the former, may be mentioned the peculiar configuration of the country, whether low or elevated, the extent of the continent, nature of the soil, whether cultivated or in a state of nature, the proximity of mountains, plains, forests, lakes,

and seas, and the course of winds. These, however, will not account for many of the phenomena which occur, and hence they are only recorded as facts beyond our present knowledge of causes.

The influence of the causes above enumerated, which may be called *local*, has always been deemed by theorists much less considerable in the eastern, than in the western continent. Hence, the opinion that their climates are materially different, has received universal sanction. It is now, however, rendered certain, by the extensive observations and diligent researches of Baron Humboldt, that the difference is much less than has been usually stated.

Various other theories, concerning the climate of different continents, and concerning that of different parts of the same continent, have in like manner gained currency without any well attested facts to support them. And among these, not the least curious or extraordinary, is that which I now propose to consider, viz.: that the climate of the valley of the Mississippi is much warmer, under similar parallels of latitude, than that of the Atlantic coast. This was first advanced, as we shall presently discover, by Mr. Jefferson, and was afterwards advocated by Volney, Williamson, and others. The arguments adduced in its support appeared so plausible, that it was received as an axiom by almost all subsequent writers upon the western country. I must however remark, that Dr. Drake and Mr. Darby,* authors of great merit, have each combated this theory, as opposed to fact and observation.

In common with many others, I adopted this opinion, in consequence of the high reputation of its advocates, and without the least examination of the facts upon which it rested. I always, however, considered it a phenomenon so curious and interesting, as to deserve a more minute investigation, and a

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* The former in his 'Picture of Cincinnati,' and the latter in his 'Emigrant's Guide.'

more ample explanation. Accordingly, upon my removal to the western country, I determined to direct my attention to this subject; and during my residence there, I obtained more accurate information concerning its climate than has hitherto been published. On comparing the results of my observations with similar ones on the Atlantic coast, I was furnished with ample testimony to prove the similarity, in this respect, between these two different sections of the United States. These observations and comparisons, it is my design now to unfold; but, previous to doing this, it will first be necessary to examine, and expose the fallacy of, the arguments adduced in support of the superior temperature of the climate of the valley of the Mississippi.

It is, I believe, to Mr. Jefferson that we are originally indebted for this theory, in regard to the difference in the temperature of the climate in various parts of the United States. In his "Notes on Virginia," this learned author observes: "It is remarkable that, proceeding on the same parallel of latitute westwardly, the climate becomes colder, in like manner as when you proceed northwardly. This continues to be the case till you attain the summit of the Alleghany, which is the highest land between the ocean and the Mississippi. From thence, descending in the same latitude to the Mississippi, the change reverses; and, if we may believe travellers, it becomes warmer there than it is in the same latitude on the sea-side. Their testimony is strengthened by the vegetables and animals which subsist and multiply there naturally, and do not on our sea-coast. Thus, Catalpas grow spontaneously on the Mississippi, as far as the latitude of 37°, and reeds as far as 38°. Perroquets even winter on the Sciota in the 39th degree of latitude. In the summer of 1779, when the thermometer was at 90° at Monticello, and 96° at Williamsburgh, it was 110° at Kaskaskia."*

* Notes on the State of Virginia, page 125, London edition.

It appears, therefore, that the author depends for the proof of this position, *first*, upon the testimony of travellers, and *secondly*, upon the growth and existence of certain vegetables and animals. I shall examine each of these points somewhat in detail, in order to ascertain whether they really furnish any evidence in favour of the theory here advanced.

The early works upon that portion of country, now the western section of the United States, contain few observations concerning the climate, and none which at all assist us in the investigation of this subject. This will not be a matter of surprise, when we consider that they generally consist of the journals or narrations of travellers, who passed rapidly over the country, and who were scarcely able to give correct descriptions even of roads or rivers. It would be unnecessary, at this time, to enumerate these different authors, or to quote their imperfect and unsatisfactory remarks. Suffice it to say, they furnish no data upon which the theory under consideration could have been founded. If Mr. Jefferson depended upon the oral testimony of travellers, which he did not deem proper to publish, as we have no means of examining it, we cannot be expected blindly to subscribe to its authenticity.

But our author further states, that the testimony of these travellers "is strengthened by the vegetables and animals which subsist and multiply naturally" on the Mississippi, "and do not on the sea-coast." Although the fact here stated concerning animals and vegetables is undoubtedly correct, it is difficult to discover in what manner it warrants the inference which has been drawn from it. Different countries, and even different sections of the same country, have peculiarities in their botany and zoology, entirely disconnected with climate. Not only several species, but entire genera, which are found under the temperate zone on the eastern continent, have never been found in any part of the western, and vice versa. Thus also, many which are found on the Atlantic coast of the United States, have never been observed in any part of the valley of the Mississippi, and

hence it is not remarkable that the reverse is also true. Examples abound in every systematic botanical work.

Granting however for a moment to this fact, abstractedly considered all the importance which Mr. Jefferson has ascribed to it, let us proceed to a particular notice of the plants and animals, which he enumerates as examples.

1. *The Catalpa.** This tree is said to be a native of Japan; and according to Mr. Nuttall, a botanist of great accuracy, is rarely to be met with decidedly indigenous, in the United States. He observes, that it "appears to have been introduced by the *aborigines;* hence its name of 'Catawba,' derived from a tribe of Indians residing on the Catawba river. In most of the *habitats* of this tree, given by the younger Michaux in his "*Arbres Forestiers,*" which I have visited, if existing at all, it had evidently been introduced. I am informed, however, by Governor Harrison of the indubitable existence of this tree in very considerable quantities in the forests of the Wabash, Illinois territory, where its wood is even split for rails; still even here it is extremely local, and I have never once met with it, either on the banks of the Ohio, the Mississippi, or the Missouri rivers, which I have ascended or descended thousands of miles. In the warmer states it does not appear to grow with any degree of vigour."† In Dr. James' account of Major Long's expedition from Pittsburg to the Rocky Mountains, we find the following remarks: "About half way between the mouth of the Cumberland and Tennessee, near the old deserted settlement, originally called Smithland, are several large Catalpa trees. They do not, however, appear to be native, nor have we here or elsewhere been able to discover any confirmation of the opinion, that this tree is indigenous to the United States."‡ I can also myself corro-

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* Catalpa syringæfolia, *Sims in bot. mag.* 1094.
Catalpa cordifolia, *Elliot. Bot. North Car. & Georgia,* vol. 1. p.24.
Catalpa bignonioides. *Walt. fl. car.* p. 64.
Bignonia Catalpa, *Willd. sp. pl.* 3. p. 289.

† Nuttall's Genera of North American Plants, vol. i. p. 10.

‡ Vol. i. page 35.

borate the facts stated by Mr. Nuttall and Dr. James; for although I have travelled over a considerable portion of the states of Illinois and Missouri, and have ascended and descended the Ohio, Mississippi, and Illinois, I have never observed this tree except in situations where it was evidently introduced; such as the immediate vicinity of towns, villages or settlements. From this, however, no argument can be drawn in regard to the climate, for it flourishes also in the vicinity of Philadelphia,* New-York,† and Albany; the last of which is in latitude 42° 39′ N., about nine minutes north of the northern boundary of the state of Illinois. It is moreover cultivated with success in different parts of Europe.

But admitting, as has been asserted by some authors, that this tree is indigenous to the United States, it can easily be made apparent that it affords no proof, that in the basin of the Mississippi the temperature of the climate is higher than on the Atlantic coast.

According to the younger Michaux,‡ "in the Atlantic states the Catalpa begins to be found in the forests on the banks of the river Savannah, near Augusta, in Georgia, and west of the Alleghanies, on those of the Cumberland, between the 35th and 36th degrees of latitude. Further south it is more common, and abounds near the borders of all the rivers which empty into the Mississippi, or which water the province of West Florida." He further remarks: "I have been assured that it is particularly abundant on the Escambia or Conechu, which discharges itself at Pensacola. It is remarkable that the Catalpa should not exist in the lower part of the Carolinas and of Georgia, and East Florida, which lie so near the country of its natural growth, and where stocks that have been planted for ornament about the houses shoot with extraordinary vigour."

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* Barton's Compendium Floræ Philadelphicæ, vol. i. p. 9.

This author appears to favour the opinion that the Catalpa is found indigenous in the vicinity of Philadelphia.

† Torrey's Catalogue of the Plants of New-York, p. 11.

‡ See his North American Sylva, vol. ii. p. 63.

In treating of this tree, Mr. Elliott, in his "Sketch of the Botany of South Carolina and Georgia," observes, that it grows in the middle and upper parts of these states, along the margins of rivers.*

The Catalpa, therefore, if at all indigenous to the United States, is extremely circumscribed in its locality, and its appearance depends upon causes in no way connected with climate; for on the sea-coast, it is not observed north or south of South Carolina and Georgia, whereas in the interior, it is found on the Wabash river, at least six or seven degrees farther north. Certainly there can be no similarity of climate between these two sections of our country.

2d. The Reed or Cane.† This plant which is also alluded to by Mr. Jefferson, is found in the greatest abundance on the alluvions of the Mississippi, where it forms the most impenetrable breaks, and extends to latitude 38° N. On the coast, it is not only more rare, but is confined to the most southern sections of the United States. And hence it affords no correct criterion by which to judge of the climates of the countries in which it is found.‡

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* Vol. i. page 24.

† Miegia macrosperma, *Pers. ench.*
Arundinaria macrosperma, *Mich. fl.*
Arundo gigantea, *Walt. fl. Car.*

‡ Dr. Drake, in treating of this subject in his valuable "Picture of Cincinnati and the Miami country," observes: "The reed or cane, which, I believe, has not been found east of the Big Sandy, was probably brought to this latitude by that river, together with Licking and the Kentucky. Finding a saline, fertile soil, it became naturalized, as it no doubt would in the dry alluvial lands of the Potomac. There is certainly nothing in the coldness of the climate along that river to prevent it; for in the winter of 1796–7, in a part of Kentucky where the cane once grew luxuriantly, and where it still existed, the thermometer between the 22d December and the 10th January, sunk many times below cipher, and once fourteen and a half degrees beneath that point, without destroying the vegetable." page 120.

3. *The Paroquet.** According to Wilson, this bird is found *resident* on the banks of the Mississippi and Illinois rivers as far as latitude 42° north. East of the great range of the Alleghanies however, it is seldom observed north of the state of Maryland; although a few straggling parties have occasionally been seen in the valleys of the Juniata, and according to some, even twenty-five miles to the north-west of Albany, in the state of New-York.† "But such accidental visits furnish no certain criteria by which to judge of their usual extent of range; those aerial voyagers, as well as those who navigate the deep, being subject to be cast away, by the violence of the elements, on distant shores and unknown countries."

The residence of this species in these northern latitudes, is a sufficient proof that it is a very hardy bird, more capable of enduring cold than most of its tribe. This is further corroborated by the fact that the celebrated ornithologist above named, saw them "in the month of February, along the banks of the Ohio, in a snow storm, flying about like pigeons and in full cry."‡

The preference however, which this bird gives to the western countries, does not depend upon the superior mildness of the climate, but upon other, though not less powerful causes. Among these are the rich and extensive alluvions of the rivers and creeks, and the deep and almost impenetrable swamps, which are covered with the sycamore or buttonwood,§ the

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* Psittacus carolinensis. The principal facts concerning the history of this bird I have borrowed from Wilson's ornithology; a work too well known and too highly celebrated to need any encomium.

† Barton's Fragments, &c. p. 6. introd.

‡ I have myself seen in the month of March, on the banks of the Illinois, in latitude 40° N. flocks of these birds flying about in the same manner, and that too when the weather was cold and unpleasant and during storms of snow and sleet.

§ Platanus occidentalis, *Lin.*

beech,* hackberry,† cypress,‡ and the cockle burr;§ the fruits of which constitute its favourite food. To these may be added the number of salines or salt licks in the west, about which Mr. Wilson remarks he never failed to see flocks of paroquets.

Hence it appears that food, more than climate, determines their choice of country: this is further proved by their local attachments. "Even in the states of Ohio, Kentucky, and the Mississippi territory, unless in the neighbourhood of such places as have been described, it is rare to see them. The inhabitants of Lexington, as many of them assured me, scarcely ever observe them in that quarter. In passing from that place to Nashville, a distance of two hundred miles, I neither heard nor saw any, but at a place called Madison's lick. In passing on I next met with them on the banks and rich flats of the Tennessee river; after this I saw no more till I reached Bayou St. Pierre, a distance of several hundred miles."

In addition to these facts, it may be mentioned that this bird was originally an inhabitant of the tropical regions, and must have migrated through the valleys of the Ohio and Mississippi; and that it gradually ascended to the north as it acquired vigour to withstand the effects of the climate. From all these circumstances, I think it may be safely inferred, that the present residences of the paroquet establish no correct standard by which to judge of the comparative temperature of the climate on the sea-coast and in the basin of the Mississippi.

From all therefore that has been advanced concerning the arguments of Mr. Jefferson in favour of this theory, I think the following results are naturally deducible, viz:

1. That the earlier works upon the western country contain no facts from which any correct inferences can be drawn, in regard to the climate.

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* Fagus ferruginea, *Lin.*

† Celtis occidentalis, *Lin.*

‡ Cupressus thyoides, *Lin.*

§ Xanthium strumarium, *Lin.*

2. That the appearance of certain vegetables and animals in the valley of the Mississippi which are not observed on our sea-coast, may depend upon causes totally disconnected with climate.

3. That the *Catalpa*, if indigenous to the United States, is only found so in the Carolinas and Georgia on the coast, and on the banks of the Wabash in the interior, six or seven degrees north of the former, and can establish no standard by which to ascertain the comparative temperature of the climate of these different sections: if introduced it proves rather the converse of Mr. Jefferson's theory, as it is found in the vicinity of New-York more than three degrees north of the northern limit which he has assigned for it on the Mississippi.

4. That the *reed* is comparatively rare in the United States, except in the valley of the Mississippi, and that its occurrence here does not depend upon the superior mildness of the climate.

5. That the *paroquet* is found resident in the valley of the Mississippi as high as latitude 42° north, and that it is capable of enduring almost any degree of cold; and that its preference to this region, depends upon the greater abundance of its favourite food.

Proceeding in the history of this theory we come next to the observations of M. Volney, a French traveller, who visited the United States in the year 1795,* a man of science and observation, who came hither to study our climate, laws, and inhabitants, and "to try," as he expresses himself, "whether a sincere friend of that liberty, whose name had been so profaned, could find for his declining years a peaceful asylum, of which Europe no longer afforded him any hope." His work throughout bears the impress of genius; but it is to be regretted that many of his opinions have been rashly adopted, and betray not only a limited knowledge of facts, but a great want of judgment and discrimination. He often exer-

* View of the climate and soil of the United States of America: &c. by C. F. Volney.

cises his ingenuity at the expense of truth, and bends the observations he has made abroad, to suit the theories which he has formed at home. Without citing other instances, his remarks on the subject now under discussion, will abundantly prove the correctness of these assertions.

By a reference to Volney's "View," we find as the text to one of his sections on climate, the following assertion, viz: "*The climate of the basin of the Ohio and of the Mississippi is less cold by three degrees of latitude than that of the Atlantic coast.*"* From the unqualified manner in which this is introduced, it might naturally be inferred that it either had been, or was about to be, most satisfactorily proved. But on the contrary, we are not a little astonished to find, that after observing, that "this is one of those singularities that deserves so much the more attention, as I do not know that it has ever yet been described with all its circumstances," the author adds, "for the principal fact I shall borrow the words of Mr. Jefferson, in his notes on Virginia."

Subsequent to this quotation, which is contained in a former part of this paper,† and upon which I have animadverted at some length, M. Volney, "*as a traveller*," adduces testimony in confirmation of the assertion of Mr. Jefferson.

And here I would again observe that we should receive with great caution the opinions of one who appears before us in this capacity, on the subject of climate, the elucidation of which not only requires attentive examination, but a lengthened series of observations. Prejudice, and preconceived and hastily adopted notions, often warp his judgment, and prevent him even from drawing correct conclusions from the *morceaux* of facts which he may chance to collect in the course of his tour. But lest the charge of illiberality should be made for the application of these remarks to the author under consideration, I shall present the "*principal results*" of the notes which he collected in his journey

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* Page 142, London Edition.

† See page 275.

from Washington on the Potomac, to Fort Vincents,* on the Wabash; and, in justice to him and to my readers, I shall use his own language.†

"1796, May the 5th, the first strawberries at Annapolis, on the shore, and at the level of the sea.

"May the 12th, the first at Washington, where the land is somewhat higher.

"May the 30th, the first at Fredericktown, at the foot of Blue ridge, about a hundred and twenty feet above the level of the sea.

"June the 6th, the first strawberries in the valley of Shenando, west of Blue ridge, and perhaps three hundred yards above the level of the ocean.

"July the 1st, at Monticello, the seat of Mr. Jefferson, the wheat harvest commenced on the lower slopes of South-west mountain, facing the south and south-east; while, on their backs, having a north-west aspect, toward Charlottesville, it did not begin till the 12th or 14th.

"July the 10th, harvest at Rockfish gap, on the summit of Blue ridge, at an elevation of eleven hundred and fifty feet. It was two days earlier in the valley of Staunton, about two hundred and thirty feet lower.

"July the 12th, harvest on Jackson's mountains, at an elevation of more than two thousand two hundred feet.

"July the 20th, harvest on the Alleghanies, at an elevation of two thousand six hundred feet.

"In this ascending line we find it uniformly more backward in proportion to the height of the level.

"On descending the other slope of the Alleghanies, that to the west, I found, that at Green Briar, situate in a low plain, it took place five days earlier, on the 15th of July.

"In the valley of the Great Kenhaway, at the mouth of Elk river, it began on the 6th.

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* Now Vincennes.

† Volney's View, pages 143-4-5.

"At Gallipolis, a French settlement on the Sciota, on the 11th.

"At Cincinnati, farther north, on the 15th.

"I found no wheat at Fort Vincents on the Wabash, where a preference is given to Indian corn, tobacco, and cotton, products characteristic of a hot country.

"On the first of July harvest had commenced at Kaskaskias on the Mississippi, as it had done at Monticello."

In the above quotation, the only fact that has any bearing upon this question, is one that is directly in opposition to the theory which it is intended to confirm, viz: that harvest commenced at the same time, at Monticello, east of the Alleghanies; and at Kaskaskia, on the Mississippi; places which, as he afterwards observes, are both in the same latitude and at an elevation nearly the same.* These trifling differences in vegetation which he noticed as he ascended the Alleghanies will not appear at all surprising to those who are acquainted with the effect of elevation upon the temperature of a climate; and those still more trifling ones on the Ohio, are such as would naturally occur on a stream having a southern course. Indeed our author himself, in reviewing the phenomena which he has detailed, is not satisfied of their importance, and even admits that they can all be accounted for in the manner above mentioned. "Still I am far from denying," says he, "that in the western country several phenomena of temperature and vegetation occur, which neither the elevation nor the aspect is sufficient to explain. Among the first in rank of these phenomena, is one observed within these few years by botanists, which every day confirms; on comparing the places in which certain trees and plants grow spontaneously on the east and on the west of the Alleghanies, they have discovered that there is a general and uniform difference, equivalent to three degrees of latitude in favour of the basin of the Ohio and Mississippi; in other words, those trees and plants, which require a warm climate, and winters less cold and of shorter du-

* Page 146.

ration, are found three degrees farther north on the west of the Alleghanies, than to the east on the Atlantic coast: thus cotton, which succeeds at Cincinnati and Fort Vincents, in the latitude of 39°, has not yet been found capable of cultivation in the Carolinas farther north than 35° or 36°. It is the same with the catalpa, sassafras, papaw, pecan or Illinois nut, and many other tress and plants, a particular enumeration of which, would require more skill in this branch of natural history than I possess."*

As this is merely an extension of the argument of Mr. Jefferson, and as M. Volney not only confesses his partial knowledge, but evinces his total ignorance of plants, I should not have noticed his remarks, had he not insinuated that he was quoting the language of standard botanical authors. It will therefore be necessary to examine the history of those plants which are said to be found "three degrees farther north, on the west of the Alleghanies, than to the east on the Atlantic coast."

1. *Cotton.*†—Botanists and agriculturalists inform us that this plant does not require a great degree of heat; and from the experiments that have already been made, no doubt remains that it may be cultivated in any part of the temperate zone. It is found to succeed not only in the states of Virginia and Maryland, but in the vicinity of the city of New-York, in latitude 40° 40′. Ascending to the north it becomes gradually more hardy, and at length, in a great measure, habituated to the climate, suffering however, as it does in all other situations, when an unusual degree of cold prevails. Perhaps, indeed it will never constitute an article of commerce in any of the northern states,‡ but in all probability a sufficient quantity will be raised to supply the wants of the inhabitants.

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* Volney's View, pages 146–7. † Gossypium herbaceum, *Lin.*

‡ I have seen it cultivated in small quantities in different parts of Ohio, Indiana, Illinois, and Missouri, but it seldom arrives at maturity more than once in two or three years.

The reason why this plant has hitherto appeared to succeed better in the valley of the Mississippi is, that the inhabitants have paid greater attention to its cultivation, in consequence of the exorbitant price they were obliged to pay for it if obtained from the eastern or southern markets. Now, however it is clearly demonstrated that under similar parallels of latitude on the coast, the climate is equally favourable to its growth.

2. *The Catalpa.*—This plant has already been noticed and nothing further need be added in this place.

3. *Sassafras.**—This is found abundantly in all the northern states, on the coast, and also in Canada.† Michaux observes. that "from Boston to the Banks of the Mississippi, and from the shores of the ocean in Virginia to the remotest wilds of Upper Louisiana beyond the Missouri, comprising an extent in each direction of more than 1800 miles, the sassafras is sufficiently multiplied to be ranked among the most common trees."‡

4. *Papaw.*◊—According to Pursh, this tree is found on the overflowed banks of rivers, from Pennsylvania to Florida. It is not uncommon in the bottoms which stretch along the rivers of the middle states; but it is most abundant in the rich valleys intersected by the western waters, where at intervals, it forms thickets exclusively occupying several acres. In Kentucky and in the western part of Tennessee, it is sometimes seen also in forests where the soil is of luxuriant fertility, of which it presents an infallible proof.‖

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* Laurus sassafras, *Lin.*

† See Pursh's Flora of North America.

‡ North American Sylva, vol. 2, p. 145.

◊ Porcelia triloba, *Pers. Syn.*
Anona triloba, *Willd. sp. pl.*
Orchidocarpum arietinum, *Mich. fl. Amer.*

‖ Michaux's North American Sylva, vol. 2, p. 84.

5. *Pecan.**—This tree is found on the banks of the Ohio, Mississippi, and other western streams,† and is peculiar to them; having never been found east of the Alleghanies. According to the younger Michaux, it is not seen east of Louisville on the Ohio. The elder Michaux learned from the French inhabitants, who ascend the Mississippi in quest of furs, that it is found on that river as far as the mouth of the Great Mackakity, which discharges itself in the latitude 42° 51′.

It appears, therefore, from the testimony of the botanical authors to which I have referred, that some of these plants are found as far north on the sea-coast, as in the valley of the Mississippi; and that the rest are peculiar to the latter, and consequently do not furnish a standard by which to ascertain the comparative temperature of the climate of these two different sections of our country.

M. Volney, in farther confirmation of his theory, proceeds to detail the facts which he collected concerning the comparative temperature of the different seasons. These however are so vague, disconnected, and unsatisfactory, as to render it unnecessary for me to combat the fanciful results he has deduced from them.

Dr. Williamson also adopts the opinion maintained by Jefferson and Volney, but unfortunately adds nothing in support of it.‡ I shall quote his remarks merely for the purpose of showing that it has received his sanction, upon the bare assertion of those who preceded him, and without the slightest examination of the arguments which were adduced in its support.

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* Juglans olivæformis, *Lin.*
Juglans angustifolia, *Ait. kew.*
Juglans Pecan, *Muhlb.*
Carya olivæformis *Nutt. Gen. pl.*

† See Pursh and Michaux, as before.

‡ Observations on the climate in different parts of America, compared with the climate in corresponding parts of the other continent, by Hugh Williamson, M. D. &c.

"On the western side of the Apelachian mountain," says he, "where cultivation is hardly begun, the winters are much more temperate than near the Atlantic ocean. This difference is attested by numerous settlers; and it has been observed that paroquets winter on the river Sciota in latitude 39°. But I have not heard of their wintering in any part of the Atlantic states, to the northward of 36°; viz. in the Great Dismal of Tyrrel county in North Carolina. It has also been observed, that tender plants thrive better in the western country, three or four degrees further north, than in the Atlantic states."*

After the authors which have been mentioned, as the advocates of the theory under discussion, it is not surprising that it should have received the sanction of a majority of subsequent writers upon the western country. They do not, however, advance any new facts or arguments, and consequently do not deserve particular notice.

I have thus examined in detail the arguments adduced in support of the superior temperature of the climate of the Mississippi, to that of the Atlantic coast, under similar parallels of latitude. This was not only essential to a full developement of the subject, but was due to the talents, ingenuity, and high reputation of the authors in whose works they are contained.

I come now to the second division of this essay, which is, to prove that the climate of the Mississippi valley, does not materially differ from that of the Atlantic coast. This I shall en-

* Dr. Williamson here refers to Loskiell's History of the Moravian Missions. I have, however, carefully examined this work, and can find nothing in it to warrant the reference. The only remarks which have the least bearing on the subject, are as follows: "It is said that the farther you travel to the west, the more fruitful and beautiful the country appears, but it is for the most part uninhabited." (Part 1, p. 8.) And again, "The weather varies also considerably on the east and west of the Alleghany mountains. For in Pennsylvania the east wind generally brings rain; but never on the Ohio, where the east wind seldom blows, and never above twelve hours at a time." (Part 1, p. 10.)

deavour to do, *first*, by a comparison of thermometrical observations; and *secondly*, by a comparison of the flowering seasons of plants.

As the temperature of a climate, although it depends chiefly upon the latitude, is more or less influenced by situation, elevation, and exposure, it may be proper to give some account of the natural formation of the different portions of country, which are the subjects of comparison. In doing this, I shall confine myself to a belt of about three hundred and fifty miles in width, bounded on the north by the parallel of latitude 43° N., and on the south by that of 37° N. This will not only embrace the territory east and west of the Alleghanies, whose climate is said to differ,* but also that in which the most correct observations have been made.

This belt is bounded on the east and west, by the Atlantic and Pacific oceans, and at nearly equal distances from these, is crossed by two chains of mountains, which form a great valley of nearly three thousand miles in extent. It is therefore naturally divided into five regions. 1. The eastern littoral. 2. The eastern mountainous. 3. The great alluvial. 4. The western mountainous: and 5. The western littoral.

The eastern littoral region is washed on the east by the Atlantic ocean, and is abundantly watered by streams which generally have a southerly course. It is from 150 to 250 miles in breadth. Its surface, although occasionally broken by ranges of hills, is in the main level. It is for the most part set-

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* Volney remarks that the difference of climate on the east and west of the Alleghanies, is attended with two circumstances of great importance, and which have not been remarked. The first is, that beyond the latitude of 35° and 36°, as you proceed southward, this difference ceases, and the temperature of the Floridas and the west part of Georgia, from the Mississippi to the river Savannah and the ocean, is subject to the same common law. The second circumstance is, that this excess with regard to temperature, ceases again almost suddenly between the latitudes of 43° and 45° north, toward the great lakes.—Volney's *View*, p. 153.

tled and cultivated, but still contains many extensive wastes and forests.

The eastern mountainous region consists of ranges of mountains rising above each other, the highest of which is several thousand feet above the level of the sea: it divides the waters of the east and west, and forms the rampart or terrace between the first and third regions. Its breadth is from 70 to 100 miles. It is but very partially cultivated, being for the most part covered with vast and impenetrable forests.

The third region includes, as I have before remarked, the vast basin or valley, formed by the two ranges of mountains. The name of the Mississippi basin is perhaps the most correct, as almost all the streams which irrigate it, empty either directly or indirectly into this stream. This basin may be considered as one continued plain having but little elevation. The eastern portion which is all that need now be described, consists of a part of the state of Pennsylvania and the whole of Ohio, Indiana, Illinois, and Missouri. It contains a great proportion of natural meadow, or what is termed *prairie land*, entirely destitute of timber. It is as yet but thinly settled and partially cultivated.

Of the two last, nothing need be said, my object being merely to compare the climate of the Atlantic coast with that of the valley of the Mississippi.

These brief and general topographical remarks, form a necessary preface to the more minute investigation of this subject.

Thermometrical observations constitute the most common, and perhaps the most correct method of ascertaining the temperature of a climate. But, in order to obtain a true result, these observations should be made with great care and be continued for a length of time. Even after this, they form no criteria by which to judge of the climate of a country, unless we know at what elevation, under what circumstances, and in what manner, they are made. Without a knowledge of these facts every thing is vague and unsatisfactory. It is on this account

that we are unable to employ many thermometrical tables which have been kept, and which in other respects, appear correct. Hence, a very limited number of places, particularly in the valley of the Mississippi, can be used in this comparison. I regret, moreover, that I have not been able to procure sets of observations made under the same parallels of latitude east and west. In order to make up for this deficiency, it will be necessary to resort to a method, which, although somewhat arbitrary, is less liable to objection than any other. It has been adopted by Baron Humboldt, in his celebrated work on the Geography of plants, for comparing the climates of the old and new continents. With a certain place in North America, whose mean annual temperature is known, for example, Natches (31° 28′ lat. 18.2°* mean temp.) the author makes a twofold comparison, viz. he first compares with this place one in the old world, which lies under the same degree of latitude; the mean temperature of this last, compared with that in North America, gives then the difference of temperature. Secondly, he compares with it a place in the old world, which has the same mean temperature, and this comparison then gives the difference of latitude between the two places. But as we cannot easily have, for such a comparison, places in the old continent, whose mean temperature, or geographical latitude, agrees exactly with the given places of the new continent, the author has, in each of these comparisons, made use of two places in the old continent, from which the geographical latitude or the mean temperature of the place is determined, that is to be compared with one in North America. He must then, in order to institute a comparison with Natches, first fix upon a place in the old continent which lies under 31° 28′ of latitude, and the mean temperature of which should be known; to obtain this, he compares Funchal 32° 27′, and Oratava, 28° 25′ and calculates from the difference between the mean temperatures of both places, the probable mean temperature of 31° 28′ in the

* Centigrade thermometer.

old continent; this is 20.5°, which number compared to 18.2° gives a difference equal to 2.3°. Secondly, he must have a place in the old continent whose mean temperature should be 18.2°; he obtains this place in the same manner through a comparison between Rome 15.8° (41° 33′ of lat.) and Algiers, 20.1° (36° 33′ of lat.)*

The application of this formula in the present instance, will not only make up for the want of observations, but will furnish the means of making the comparisons with greater facility. From five places on the sea-coast in different parallels of latitude, whose mean temperature is known, we shall be able in this manner, to ascertain the probable mean temperature of those points on the coast corresponding in latitude with those places in the Valley of the Mississippi, whose mean temperature has also been ascertained. These places, in the former region, are Albany, (New-York.) Cambridge, (Mass.) New-York, Philadelphia, and Williamsburgh, (Virginia); and are included within a range of about six degrees of longitude; on the latter region, Cincinnati, (Ohio) St. Louis, (Missouri) and Council Bluff. I shall now present a tabular view of their latitudes and mean temperatures.

1. *On the Atlantic Coast.*

	Latitude.	Longitude.†	Mean Temp.
Albany, (N. Y.)	42° 39′ N.	72° 32′ W.	48.7° ‡
Cambridge, (Mass.)	42 25	71 7	50.4 ◊
New-York,	40 40	74 1	53.8 ‖

* Observations concerning the geography of plants, in Brande's Quarterly Journal, vol. x. 235.

† From Greenwich, Eng.

‡ Three years observations, 1820–21–22, by T. Romeyn Beck, M. D. See the New-York Medical and Physical Journal, vol. ii. p. 253.

◊ Two years of observations. See an abridgment of Baron Humboldt's memoir on Isothermal Lines, and the Distribution of Heat over the Globe. Thompson's Annals of Philosophy, vol. xi. p. 177.

‖ Two years. Humboldt, as above.

	Latitude.	Longitude.	Mean Temp.
Philadelphia,	39° 56′ N.	75° 10′ W.	53.9° *
Williamsburg, (Va.)	37 16	76 55	58·1 †

2. In the Valley of the Mississippi.

Cincinnati, (Ohio.)	39° 6′ N.	84° 37′ W.	54.3° ‡
St. Louis, (Missouri.)	38 36	89 36	56·2 §
Council Bluff,	41 31	96 42	49.2 ‖

From this table it appears, that the mean temperature of Cincinnati, is only four-tenths greater than that of Philadelphia, although the former is 50′ south of the latter. The difference here, is probably not greater than it would be east of the Alleghanies. The comparison between the climate of these two places, has been so ably drawn by Dr. Drake, in his Picture of Cincinnati, that I shall do no more than state that this author gives it as his opinion—the result of numerous and faithful observations—that the climate of Cincinnati is not warmer than that of a corresponding parallel on the coast.

Proceeding in our comparison we come next to St. Louis on the Mississipi, in latitude 38° 36′ N. and 12° 15′ of longitude west of Cincinnati. But, as the mean temperature of this parallel on the coast, has not been ascertained by observations, it must be done by the rule above prescribed. Taking, there-

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* Dr. Rush states the annual of Philadelphia at 52.5° ; more recently, Dr. Coxe, from six years observations, deduced 54.2°. According to Mr. Legaux the mean heat of Springmill, on the Schuylkill, as drawn from seventeen years observations, is 53.3°. (Drake's Picture of Cincinnati, p. 116,) seven years of observations give 54.8°. Mean temperature of springs near Philadelphia 54.8°. Warden, (Humboldt in Thompson's Annals.)

† Humboldt in Thompson's Annals.

‡ Eight years' observations ; Drake's Picture of Cincinnati, p. 93.

§ Three years. See a Gazetteer of the states of Illinois and Missouri, by the author of this essay, p. 197.

‖ One year. Metereological Reports of the Surgeon General of the United States Army, published in the Medical Repository, New Series, vols. vi. & vii.

fore, Philadelphia in latitude 39° 56′ (53.9° mean temp.) and Williamsburg in latitude 37° 16′ (58.1° mean temp.) the mean will be 38° 36′, corresponding exactly with the latitude of St. Louis; and the probable mean temperature at this point will be 56.1°; only one-tenth of a degree higher than that of the latter place. The limited number of observations prevent the application of the second part of the formula, in order to ascertain the corresponding difference of latitude. This difference is, moreover, so very trifling, that it would not only be difficult but useless to settle it.

The next and last point of comparison, is Council Bluff, in latitude 41° 31′ N., and whose mean heat is 49.2°. And here I must again resort to the method of calculation above adopted. By comparing therefore New-York, latitude 40° 40′ (mean temp. 53.8°,) and Albany latitude 42° 39′ (mean temp. 48.7°,) the mean latitude will be 41° 40′, and the probable mean temperature of this point will be 51.2°. But this point is nine minutes north of the parallel of Council Bluff; and calculating from the whole difference between the mean temperature at Albany and New-York, the difference of mean temperature of latitude 41° 40′, and 41° 31′ will be about 00.5°. Adding this to 51.2° will give us 51.7° as the probable mean temperature of latitude 41° 31′ on the coast.

From these comparisons therefore which are as correct as the limited number of observations will admit, it appears that the mean temperature of Cincinnati is the same as that of the corresponding latitude of the Atlantic coast; of St. Louis one-tenth higher; and of Council Bluff two degrees and a half lower. And hence, taking the mean of all the differences obtained from the above data, it may be assumed that the temperature of the valley of the Mississippi from latitude 38° 36′ to 41° 31′ N. and from longitude 84° 27′ to 96° 42′ W. is eight-tenths of a degree *lower* than that of the Atlantic coast.

It will be observed that I have thus far only treated of the *annual* temperature of these places. I shall therefore next

compare the different seasons; for the temperature of the cycle of vegetation, upon which depends the growth of plants, may be very different in places having the same mean annual temperature.

The following table will show the mean temperature of the different seasons at the places above mentioned.*

1. *On the Atlantic Coast.*

Names of places.	Latitude.	Longitude.	Mean temp. of winter.	Mean temp. of spring.	Mean temp of summer.	Mean temp. of autumn.
Albany,	42° 39′ N	72° 32′ W	24.6°	47.7°	72.2°	50.6°
Cambridge,	42 25	71 7	34.0	47.6	64.4	49.8
New-York,	40 40	74 1	29.8	51.2	79.2	54.6
Philadelphia,	39 56	75 10	32.2	51.4	74.0	56.6

2. *In the Valley of the Mississippi.*

Names of places.	Latitude.	Longitude.	Mean temp. of winter.	Mean temp. of spring.	Mean temp. of summer.	Mean temp of autumn.
Council Bluff,	41° 31′ N	96° 42′ W	20.1°	51.5°	74.6°	49.9°
Cincinnati,	39 6	84 27	32.9	54.4	72.8	54.4
St. Louis,	38 36	89 36	34.5	54.7	75.3	60.7

In the two last situations, therefore, in the second table, the temperature is more equally distributed among the different seasons than in corresponding latitudes on the coast; the summers being less hot and the winters less cold; completely disproving the assertion of Major Stoddard in his sketches of Louisiana, and which has also been incorporated among the erroneous notions to which the theory of Mr. Jefferson has given rise.

I come next to the proof in favour of the position I have laid down, drawn from the phenomena of vegetation.

It is a fact well established, that the climate can be determined with the greatest precision by the plants which vegetate

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* I have not been able to obtain the mean temperature of the different seasons at Williamsburg, (Virginia,) and it is therefore omitted in the table.

in any country, and that observations on the distributions of plants in different countries serve to distinguish the climates of these countries from each other.* Such observations, however, from their very nature could not be used to any purpose in this comparison. A more easy, but not less accurate method of ascertaining the difference between the climate of different sections of country is by comparing the flowering seasons of plants.†

My attention was first directed to this subject by the remarks of Muhlenburg and Professor Bigelow,‡ and during my residence at St. Louis I kept an accurate register of the time of flowering of all the plants which I collected. The mean results of my observations upon a few of the most common of these, I shall now compare with similar ones made at Washington city,§ on the coast, in latitude 38° 58′ N. twenty two minutes north of the former.

Names of Plants.	*Habitats at St. Louis.*	Time of flowering at St. Louis.	Time of flowering at Washington City.
Sanguinaria Canadensis, *L.* (Blood root.)	Side hills	March 28.	April 6.
Claytonia Virginica, *L.* (Spring beauty.)	Low situations, prairies & woods.	April 20.	April 10.
Ranunculus fascicularis, *Big.* (Crowfoot.)	On the alluvions.	April 20.	April 14.
Uvularia perfoliata, *L.* (Bellwort.)	Side hills.	April 14.	April 21.
Fragaria virginiana, *L.* (Strawberry.)	Prairies.	April 15.	April 28
Ranunculus abortivus, *L.* (Butter-cup)	Alluvions.	April 18.	April 20.
Geranium maculatum, *L.* (Cranesbill.)	Prairie and woods.	April 18.	May 5.
Laurus Benzoin, *L.* (Spice bush)	Banks of the Mississip.	April 20.	April 7.
Dodecatheon meadia, *L* (False cowslip.)	Barrens and prairies.	April 20	April 28.
Cornus florida, *L.* (Dog wood tree)	Hills.	April 20.	April 21.

* See observations on the heat of springs, and on vegetation, in order to determine the temperature of the earth and the climate of Sweden. By George Wahlenberg, M. D. &c. in Thompson's Annals of Philosophy, vol. iv. p. 22.

† This method more particularly indicates the difference in the temperature of the cycle of vegetation.

‡ Silliman's Journal of Science and Arts, vol. i. p. 76.

§ Florula Columbiensis: or a list of plants found in the District of Columbia, during the years 1817 and 1818.

Names of Plants.	*Habitats at St. Louis.*	Time of flowering at St. Louis.	Time of flowering at Washington City.
Aquilegia canadensis, *L.* (Columbine.)	Alluvions, bluffs, hills.	April 20.	April 28.
Arum triphyllum, *L.* (Indian turnip.)	Moist shady situations.	April 22.	April 28.
Porcelia triloba, *Pers.* (Papaw.)	Alluvions.	April 23	May 5
Podophyllum peltatum, *L* (May apple.)	Alluvions.	April 23.	May 5.
Hypoxis erecta, *L.* (Star grass.)	Prairies.	April 26.	May 5.
Potentilla canadensis, *L.* (Common five finger.)	Prairies, forests, and barrens.	April 29.	April 14.
Rubus trivialis, *Mx.* (Dewberry.)	Prairies and barrens.	April 30.	May 5.
Cerastium vulgatum, *L.* (Mouse-ear chickweed.)	Banks of creeks.	May 1	May 4.
Tradescantia virginica, *L.* (Spider wort.)	Barrens and prairies.	May 9.	May 19
Convallaria racemosa, *L.* (Solomon's seal.)	Alluvions, woods, and prairies.	May 10.	May 19.
Houstonea cærulea, *L.* (Venus' pride.)	Prairies.	May —.	April 14.
Iris virginica, *L.* (Wild flag)	Marshes.	May 14.	May 19.
Ceanothus americanus, *L.* (New-Jersey tea.)	Prairies and barrens.	May 15.	June 15.
Achillea millefolium, *L.* (Yarrow, milfoil.)	Prairies and barrens.	May —.	June —.
Prunella pennsylvanica, *Willd.* (Self heal.)	Barrens and prairies.	May 30.	June 2.
Phytolacca decandra, *L.* (Poke.)	Banks of streams.	June 7.	June 30.
Malva rotundifolia, *L.* (Dwarf mallow.)	Old fields and road sides.	June 9.	June 16.
Lepidium virginicum, *L.* (Pepper wort.)	Hills	June —.	May —.
Rhus glabrum, *L.* (Common sumach.)	Barrens.	June —.	June 23.
Lobelia pallida, *Muhl.*	Prairies.	June 19.	June 2.
Asclepias tuberosa, *L.* (Butterfly weed.)	Prairies.	June 19.	June 23.
Sambucus canadensis, *L* (Elder.)	Prairies.	June 19	June 9.
Cephalanthus occidentalis, *L.* (Button bush.)	Rocky banks of the Mississippi.	June 26.	July 7.
Lysimachia ciliata, *Mx.* (Loose strife.)	Timbered alluvions.	June 26.	June 16.
Bignonia radicans, *L.* (Trumpet flower)	Timbered alluvions.	June 26.	June 30.
Circæa canadensis. *Muhl* (Enchanter's nightshade.)	Timbered alluvions.	June 29.	June 30.
Anemone virginiana, *L.* (Thimble weed.)	Alluvions and barrens.	June 29.	June 23.
Hypericum perforatum, *L.* (St. John's wort.)	Prairies.	July —.	June —.
Cucubalus stellatus, *L.* (Campion)	Timbered alluvions.	July —.	June 23.
Scutellaria lateriflora, *L.* (Skull cap.)	Banks of the Mississip	July 22.	Aug. 4.
Phlox paniculata, *L.* (Smooth stem lichnidia.)	Timbered alluvions of creeks.	July 31.	Aug. 18.
Eupatorium perfoliatum, *L.* (Bone set.)	Exsiccated ponds.	July 31.	July 7.
Cassia marylandica, *L.* (Wild Senna)	Alluvions of creeks.	July 31.	Aug. 4.
Scrophularia marylandica, *L.* (Figwort.)	Barrens.	Aug. 2.	Aug 18.
Solidago lanceolata, *Ait.* (Golden rod.)	Prairies.	Aug 13.	July 28.
Eupatorium cælestinum, *L* (Blue bone set.)	Barrens and hills.	Aug. 15.	Aug. 3.
Cuscuta americana, *Willd.* (Dodder.)	Prairies and woods.	Aug 23.	Aug. 29.
Helenium autumnale, *L.* (False sun flowers.)	Prairies aud barrens.	Aug. 23.	Sept. 7.

From this comparison we obtain the mean result, that vegetation at St. Louis is less than two days earlier than at Washington city. And allowing the correctness of the conclusion of Dr. Bigelow, that a difference of about *four days*, correspond to a difference of *one degree* of latitude, we have here another striking proof of the similarity of climate in these two different situations.

If any importance can be attached to the observations and comparisons which I have detailed, I flatter myself that I have satisfactorily proved the truth of the position which I have laid down. I invite a free and full examination of all that has been advanced.

ART. II. OBSERVATIONS *on* DYSENTERY: Delivered at Utica, N. York, as a discourse before the Medical Society of the County of Oneida, at the Anniversary Meeting in July 1823. By DR. ALEXANDER COVENTRY, President of said Society.

ACCORDING to our regulations, it has become my duty to address you on the present occasion.

Permit me to solicit your attention, while I offer some observations on the nature and treatment of Dysentery. I have selected this disease from a conviction that the information to be obtained from systematic writers concerning it, is very defective. This may be easily accounted for, from these authors having had few or no opportunities of personally studying the nature of the malady; for although it might have been otherwise in the time of Sydenham, I believe at present it is a disease of rare occurence in the island of Great Britain. I doubt much if Dr. Cullen in his long and extensive practice, ever had an opportunity of meeting with real dysentery. With the exception of Sydenham, most of the British authors, to whom we are indebted for treatises on dysentery, belonged to the medical staff of the army. These gentlemen found the disease frequently complicated either with camp diarrhœa, the fluxus castrensis, or with hospital and typhus fever; hence a contagious character was attached to dysentery, an attribute which time and experience has shown not to exist. Doctor Jackson states that it was not contagious in the campaigns he was in. The ancients had but a very confused idea of dysentery. Hippocrates seemed to designate by that appellation almost every affection of the primæ viæ, attended with a flux.

Celsus gave it perhaps the more appropriate name of Tormina, with a flux; after his time, Galen, Aretæus, and others, resumed the Greek appellation, and seemed to connect with the disease an ulceration of the internal coat of the intestines. It will be remembered that the ancients were only acquainted with *comparative anatomy*, and were not in the habit of *making autopsic examinations*. To the English physicians, Willis and Sydenham, we are indebted for the first accurate accounts of this disease. Willis proved by dissection, that the bowels were not generally ulcerated, and he also denies the contagious nature of dysentery. Sydenham, who (as Dr. Rush justly observes) considering the age he lived in, might be almost ranked in medicine with Newton in physics, has given an accurate account of the symptoms, and pointed out a mode of treatment, which, at the expiration of a century and a half, with all the light that science has thrown on the practice, will be found excellent.

While mentioning the symptoms I cannot avoid remarking, that the physician has but seldom an opportunity of studying a disease in its first approach. In our hospitals the sick are not unfrequently (especially in acute diseases) brought in, to die, and be buried at the public expense. In private practice, the skill of the good lady of the house, aided by Dr. Buchan, must be exhausted before the physician is called upon. I mention this to account for the difference among medical men, as to the commencement of dysentery. Some describe it as beginning with a chill, others with fever, and some as preceded by a flux; but I state from authors practically acquainted with the disease, and confirmed by my own personal experience, that generally the first symptom will be a nausea or loathing of food, a painful sensation of fulness and weight in the epigastric region, soon succeeded by painful and violent griping. A most distressing but ineffectual effort is made to go to stool, the nausea sometimes increases to vomiting, but nothing is brought up except the food. After considerable straining, preceded by intolerable griping, a small quantity of white mucus, frequently

spotted or streaked with the blood, is forced out. This quantity is increased by repeated efforts; the proportion of blood becomes larger, sometimes only mucus of a light colour is seen; but these scanty evacuations afford no relief. If the disease is left to nature, or improperly treated, the griping becomes insupportable, the wretched patient cannot leave the stool for a moment, fever supervenes, the mucous coat, first of the large intestines, becomes inflamed: this inflammation is communicatedto the small intestines,and neighbouring viscera. Shreds of membranous substance appear in the stools, and sphacelation soon brings on the fatal premonitors of dissolution.

These are the common train of symptoms; but the disease often puts on a still more formidable appearance, especially among young and robust Europeans, on their first arrival in tropical climates. The disease begins with immense discharges of blood, and the vital energy is destroyed at once. This was the case with the American troops stationed in 1809, at Terre au Bœuf on the Mississippi: the sentinels would drop at their posts, and thence were carried to their quarters, where a few hours put a period to their sufferings. Dr. Parr observes, that dysentery is never without danger, and never to be slightly regarded, for nature alone contributes very little to its cure; there is always danger of mortification of the bowels, till the disease gives way. Dissections have shown the mucuous membrane of the intestines, from a state of simply increased vascularity, at times covered with coagulable lymph to a state where it was denuded of its epidermoid covering, even ulcerated and hanging in filamentous fragments as if sphacelated. In many dissections have been found numerous holes large enough to admit the head of a pin, especially in the rectum and colon regularly round, and for the most part, vascular in the centre, with elevated ridges; these were the ducts of the mucous glands which secreted a gelatinous matter, of which these cavities were often full: but I am confident that these appearances in the intestines are the effects, not the causes, of this disease. The liver

in a majority of dissections, was apparently sound, but in a good many, remarkably otherwise. In a considerable number of bodies, it has been found in a state of great sanguineous congestion. In dissections of dysenteric subjects in India, the liver is generally found in an unsound state.

It is agreed to by those who have enjoyed the best opportunities of making observations on dysentery, that the fever which accompanies the disease in its advanced stages, is rather an effect than an essential part of the malady. Indeed, it has been frequently observed, that fevers of the remittent and intermittent type, will hold alternate periods with this complaint: thus when the fever rages, the dysentery subsides, and when the latter is predominent, there is apyrexia. Some authors have connected dysentery with diarrhœa, or rather considered it as a sequel to the latter. Even Sir James Macgregor says: "I have ever found a difficulty in distinguishing dysentery from diarrhœa." This appears to me surprising, for certainly there is no similarity in the symptoms of the two diseases. What analogy is there between the sick stomach, horrible tormina, harassing tenesmus, scanty colourless mucus streaked with blood, passed by stool, of the one, and the copious deeply coloured discharges of the other? In the one, the biliary excretions are entirely wanting, the peristaltic motion suspended, or thrown into spasmodic and abnormal action; in the other, there seems to be often a superabundance of bile, and increased peristaltic energy. A mistake like this could only occur in a camp where, from a change of diet and new habits of life, all new levies are subject to diarrhœa, and in unhealthy locations many of them to the dysentery. Most of our militia who were stationed on the frontiers, during the last war, returned home with diarrhœas; but I did not find among them any dysentery. An officer, high in command, was attacked with diarrhœa in the campaign of 1814; this harassed him until 1821, without, however, being attended with a single dysenteric symptom. A friend of mine also in this village, has had a very troublesome flux for several

seasons, but without any appearance of dysentery. Indeed, for many years, I have been in the habit of thinking, that diarrhœa was the very best prophylactic against dysentery. And following the maxim of Hippocrates, *quo natura verget eo ducere oportet*, have invariably recommended exciting a catharsis as the surest preventive, not only against dysentery, but also against intermittent and remittent fevers, with which the intestinal disease has not a little affinity. The diseases taking place at the same season of the year, in the same districts of country, and, as I before observed, frequently alternating with each other, have insensibly led to the conclusion that the remote cause is the same. How shall I approach this intricate subject, the cause of fever? Even in the short time since I became acquainted with medicine, at least a half dozen of elegant hypotheses have been erected by the first medical men of the age, whose doctrines were held sacred as the inspirations of the Pythian goddess, as if founded on evidences strong as proofs of holy writ; yet, these theories have passed away, like the phantasies of a morning dream. Need I mention the names of Stahl, Boerhaave, Hoffman, Cullen, Brown, Darwin, and Rush, those master workmen. Where are now their beautiful edifices? crumbled to the dust—they are gone, nor does a vestige remain. Like the palace of Priam on the plains of Ilium, they will be sought for in vain. How then shall a practitioner in a remote part of America, assume courage to sport his opinion on a subject of so much importance, as the cause of fever. But, although bred in the bustle of a city, educated at the school of Cullen, it was in the solitude of the western wilds where nature first seemed to withdraw her veil. I soon found I must unlearn what I had been taught at the schools; and that spasm, sthenia, and asthenia, accumulated sensibility, were only *voces et præterea nihil*. As the mind of man is, however, always searching for causes, and practice without reason is mere empyricism, I formed to myself a system, in

which thirty years experience has tended rather to strengthen, than impair, my belief.

The diseases generally, but erroneously, called bilious, as agues, remittents, and dysenteries, have been alledged to arise from miasmata, but the nature of this supposed substance, is no better known than the typhon of the ancients. From a residence of many years in the vicinity of marshes, and having seen many thousand acres of marsh, both on the sea board and in the interior, where neither ague nor dysentery was known, I am convinced that it is only under certain circumstances that marshes become unhealthy. Having more than once seen the effects attributed to miasma produced at a distance from marshes, I am fully convinced, that the effects imputed to marsh miasmata, are the true offspring of animal or vegetable putrefaction, often combined, sometimes acting separately, and independent of each other. This conviction has arisen from facts, collected during the period of thirty-five years, but for the detail of which, the present occasion does not afford an opportunity, nor can I at present enter into an investigation of the manner in which the process of putrefaction operates on the atmospheric air, which must be the medium through which the body is affected.

The effect on the human body appears to bear a great resemblance to that of a powerful sedative poison, not dissimilar to that of the upas antiar or the prussic acid. Its effects vary according to the quantity, or intensity of the virus, and are much modified by the condition of the subject. Thus it may be so deleterious or concentrated as to destroy life at once, as happened at the opening of a vault in a town in France ; nearly so, as in the death of the ever to be regretted Bichat, and as it frequently does in the plague, the spotted and sometimes in the yellow fever. In these cases the nervous sensibility is destroyed, and no chance of re-action exists. Its effects are modified by the condition of the person. Providence has kindly decreed, that our systems may become habituated to the most powerful poison, of which the use of tobacco is a common and

striking instance. The air of New-Orleans is innocuous to the native Louisianean, whilst the New-Englander and European, will in ninety-nine cases in a hundred sicken and die in it. Whilst a sense of languor, a dislike to action, a slight nausea, indicates to the native, that there is insalubrity in the air, the stranger sinks into stupor, or a violent re-action and burning fever take place. From some attention to the modus operandi of this cause, I am induced to suppose that the first effects are exerted on the cuticular nerves; for as a sentinel to guard the important internal organs, the skin is plentifully supplied with nerves, and its sensibility is perhaps superior to any other part of the frame. Here then is the poison applied: a species of atony takes place in the sanguiferous system: too gross particles are admitted into the capillaries. Instead of the clear look of health, the surface becomes of a brown or yellow tinge, the adnata of the eye become muddy, and the countenance of a purplish brown. These appearances are so striking, that in the autumnal months it is easy to distinguish the inhabitant of unhealthy regions from others. The intense sympathy between the skin and the stomach with the other chylopoietic viscera, is acknowledged by all pathologists. Suppose the nervous energy of the last-mentioned organs lessened by sympathy with the surface, what will happen in the portal circle? The circulation being here unassisted by the vis a tergo, little aided by lateral pressure, and its vessels labouring under a partial atony, congestion takes place; the liver becomes incapable of performing its office; the intestinal canal already labouring under a lessened nervous energy, is deprived of its natural stimulus; the mesenteric veins without valves, are gorged; the regular peristaltic motion is interrupted; spasms and abnormal motions, the never-failing concomitants of nervous debility, take place; the patient is tormented with gripings, while the scanty light-coloured feces indicate the entire absence of bile; the duodenum, supplied by the same nerves and sympathizing deeply with the neighbouring viscera, becomes paralyzed; hence the motion not being propagated regularly, hardened feces

and other substances will remain a long time in the canal, notwithstanding the incessant attempts at evacuation. Morgagni mentions the fact of two pints of green peas remaining in a dysenteric person from June to December. The engorgement and atony of the liver, stomach and chylopoietic viscera will account for the fulness, loss of appetite, and nausea, experienced at the commencement, and often throughout the course of dysentery.

When the system is under the influence of this virus, or as it were duly prepared, an adventitious circumstance, such as getting wet, or a sudden change in temperature, may cause the disease to assume the shape of an intermittent, remittent, malignant fever, or that of dysentery. Without the previous predisposition, these circumstances might induce catarrh, pleurisy, or rheumatism, but never a dysentery. Some have supposed this disease the effect of heat, but facts will not support the supposition. The Arab, amid his scorching sands, the inhabitants of the burning province of Cumana, those on the coast of Coro, or the plains of Caracas, are as great strangers to agues and dysenteries, as the Alpine Swiss, or Caledonian Highlander. Neither will cold ever produce dysentery without a previous predisposition.

I will now enter on ground where I hope to find myself more at home, and request your indulgence while I make some remarks on the treatment of dysentery. After noticing the opinions of some others, I will lay before you the plan pursued by myself, and conclude by recommending the course which is the result of experience, combined with the information I have been able to glean from the latest and most practical treatises on the subject.

I will not intrude on your leisure by a long detail of my reasons for rejecting the methods recommended by others, but beg leave to state that some I have faithfully tried and found deficient; others your own good sense will see the impropriety of. Among the latter I need hardly mention the use of astringent, and stimulating medicines. Burned brandy and

sugar, oak bark, and blackbrier root, the catholicons of the wise matrons of this and former times, have cured many dysenteries, by putting an end to the sufferings of the patient. The ipecacuanha, rhubarb, and opium, recommended by systematic authors, are mere trash. The ipecacuanha, if ever useful, ought to be given in large quantities and combined with full doses of laudanum, so as to keep up a free perspiration; but even in this way, it only acts as a secondary adjuvant. Rhubarb I judge pernicious in dysentery. The judicious Cullen, even without experience, saw this. In the cholera of infants it may be useful, but even that is doubtful. By the exhibition of opium at the beginning, you may obtain an insidious truce, during which the enemy will probably undermine the constitution of your patient; yet in some stages, and under certain circumstances, much benefit may be derived from this medicine.

Some medical gentlemen attached to the army and navy of Great Britain have strongly recommended copious venesection. To a young, robust, and well-fed Englishman, entering the hot and sickly climates of the East or West Indies, it is a sine qua non, but to the natives of these countries it would be a fatal experiment. With us, whose constitutions, although somewhat enfeebled by the summer heats, are renovated by the rigours of winter, a middle course will be prudent. The acetate of lead got into considerable use during our last war. But this I deem much more exceptionable than even rhubarb, and the calm produced by it much more dangerous than that by narcotics. Two valuable officers, Col. Johnson and Major Beebe, lost their lives by using the acetate for diarrhœa. Yet to allay the irritation in the rectum, while other medicines are exhibiting which counteracts its bad effects, the acetate may be useful. Dr. Rush's Sampson, the submuriate of mercury, has been highly recommended by several writers on the dysentery. With many practitioners calomel seems to have superseded or rendered useless every other article in the Materia Medica. But, gentlemen, although I have a very exalted opinion of the powers of this medicine, and have often seen

the most beneficial results from its use, yet have I long been of the opinion that whenever we can achieve our purposes without mercury, we ought to avoid the risk of its use. In the East and West Indies there is a high and equable temperature, and of course a free and copious perspiration. In these climates the mercury is given in immense doses, and seemingly with impunity; but in the variable clime of the middle and north of Europe, as well as in this country, mercury is a remedy that on every slight occasion ought not to be resorted to. Such is the idiosyncrasy of different constitutions, that it is only by experiment we become acquainted with the effects of mercury upon the individual. I have often seen a moderate dose create symptoms that nearly resembled those of dysentery. While attending the clinical ward in the Edinburgh Infirmary, I witnessed a ten grain dose induce a diarrhœa, which the first medical man of the age, with all his skill, could not arrest, and which destroyed the patient. A lady in this village had a month's sickness from a one grain pill which I gave her. I was surprised at the event, but learned that it had always affected her mother in the same manner. We have now a patient labouring under a severe salivation from the exhibition of less than twenty-one grains given in small doses. Another patient underwent a violent salivation from a six grain dose combined with jalap. I must also state the case of another who took between three and four hundred grains, and had many ounces of ointment rubbed in for an affection of the liver, yet his gums never changed colour. In scorbutic and scrophulous constitutions its effects are sometimes dreadful. Some years ago, J. H—— came to me with a small but painful swelling under the eye. It appeared to be one of the conglobate glands obstructed and a little inflamed. I applied a mercurial plaster, the bigness of a half dollar. On the morning of the fourth day he came to me with the gland completely sphacelated, and his frame sinking under a putrid diathesis, the pulse intermitting, and strength gone. Nothing but the almost divine virtues of the cinchona sav-

ed this man. The effects of mercury in scurvy are forcibly portrayed by Dr. J. W. Heustis in his excellent description of the sufferings of the troops stationed at Terre au Bœuf. He says a violent salivation immediately ensued on its use, their gums became prodigiously large, fungous, and putrid, the mortification rapidly increased, hermorrhages returned with greater profusion than ever, and every symptom was rapidly and sensibly aggravated. A few doses of this medicine relieved the patient of his misery and put an end to his earthly sufferings.*

I will not detain you longer by detailing the deleterious effects of this powerful medicine when injudiciously used. When the irritability of the stomach is such that nothing else will remain on it, I look upon its exhibition as indispensable. In two cases, one of dysentery, the other of constipation, with violent pain, I thought that my patients were rescued from the grave, by repeated doses of calomel, which all the efforts of vomiting could not force up. In the latter the constipation had lasted seven days, and feces of a stony hardness at last passed; but in common cases of dysentery I never should commence with calomel. Besides the objections above stated, the slowness of its operation is with me a very important one. It sometimes remains in the bowels a long time, during which the patient is suffering severe pain.

I shall now proceed to state to you my own experience in this disease, relying on your kindness to excuse or overlook any apparent egotism which it is almost impossible to avoid, when a man is under the necessity of becoming the historian of his own acts.

Although I had lived several years in Glasgow, accounted the second city in point of population in the British dominions, yet neither there nor while attending the Edinburgh hospital, where three or four hundred persons are annually admitted, had I in public or private practice an opportunity of seeing a single case

* Physical observations on the topography and diseases of Louisiana. By J. W. Heustis, M. D.

of dysentery, nor was I more fortunate as to this, during a residence of five or six years on the Hudson river. On the 7th of June, 1792, I arrived with my family at my former residence near the outlet of the Seneca lake, opposite to the village of Geneva. On the 7th of July, leaving my family all in perfect health, I set out for Albany, and on the 5th night slept about eight miles west from Schenectady. Next morning I felt a nausea and loathing of food for which an antifogmatic was ordered, but without effect. A single cup of tea sufficed for breakfast at Schenectady; nor had I proceeded many miles through the pine woods, when I was seized with the most insufferable gripings, aggravated with attempts at vomiting, and violent but ineffectual straining to stool. Thirty years have not effaced the recollection of the torture I suffered in that then lonely ride. I at last arrived at a public house, and although within two miles of Albany, I found it impossible to reach the city. Although my accommodations were but indifferent, I had the good fortune to find some neutral salts, and with chicken water seasoned with the salts, I made a most acceptable beverage. My medicine operated in less than an hour, and relieved me from the most racking tortures I had ever experienced. Next morning I renewed my dose; and for four days and nights all my food was chicken water seasoned highly with sulphate of soda; on the fourth I had a paroxysm of intermittent, with a plentiful perspiration, when my stomach and bowels seemed relieved.

On the 5th day, I added an ounce of bark to my ration, and from that time convalesced gradually. On reaching home after a fortnight's absence, out of fourteen inmates, I found thirteen lying sick with the lake fever; and on the third day after my arrival, the only one that could walk to the door was also attacked. Owing, as I supposed, to my dysenteric attack, I escaped till the middle of September, when from a state of apparent strength, I was reduced by seventy-two hours fever, to infantile weakness, and at the end of five weeks, could scarcely crawl to the door to breathe the fresh air, and view the exhila-

rating appearance of nature. The seasons of 1793 and 1794 were very sickly in the Genesee country, in proportion to the population. There were a much greater number of cases of fever than in the cities, although not so fatal in their termination. I remember a time when in the village of Geneva, there was but a single individual who could leave her bed, and for several days she alone, like a ministering angel, went from house to house bestowing on the sick the greatest of all boons, a drink of cold water. During the seasons last mentioned, dysenteries occasionally appeared, preceding or following and sometimes alternating with the fever. In 1795, no rain fell either in June or July; the waters in the lakes lowered more than a foot; every little inlet became a seat of putrefaction; the heaven seemed on fire, the earth scorched, and the air saturated with pestilence; the hogs were found dead in the woods, the flies swelled and turned white, and lay in handfuls on the floors of our rooms. On the 18th day of August, I was called to visit Judge P. at Aurora, on the east side of the Cayuga, whose house I believe was the first one that had been built on the military tract; one apartment contained the corpse of his wife, who had expired a few hours before my arrival with every symptom attendant on malignant or yellow fever; in another apartment the Judge and two children lay with very threatening symptoms. While attending here on the night of the 22d, I heard the pleasant sound of thunder, and soon after the more delightful noise of the rain pattering on the roof, with which our ears had not been regaled for the last two months. A change of at least twenty degrees of temperature followed, together with a copious fall of water. The patients labouring under fever, seemed to be immediately benefited, and the new cases decreased. But dysentery soon made its appearance in the most appalling and fatal form, occasioned without doubt, by this sudden change of temperature, causing a checked perspiration in persons fully prepared. On my return, I found that three persons had died of dysentery on the preceding day in the village of Geneva, and was informed that several others

lay at the point of death. On my arrival at my own house, I found my second daughter seemingly in the last stage of the disorder, four days sickness having reduced her to a skeleton; the tormina or gripings were terrible, the tenesmus so harassing that she could not remain five minutes from the close stool; yet the most violent efforts produced only a little mucus spotted or streaked with blood. With the proofs of the fatality of the disease as it were before me, I almost despaired, yet an effort was to be made: I had a flannel bandage put round the abdomen, and began to give a solution of the sulphate of soda, in which I dissolved a small quantity of the tartrite of antimony, beginning with a small dose, increased as the stomach could bear it every ten minutes, at the same time urging repeated draughts of chicken water, or sweat whey. In less than an hour and a half a copious discharge of excrementitious matter together with some hardened feces, took place for the first time in four days. After this the griping abated; the medicine was however continued, and on the second operation, an enema composed of a watery solution of opium with a little starch was exhibited. This course was pursued, and at the end of forty-eight hours, debility and emaciation were the only remains of a disease which was hurrying my child rapidly to the grave. I observed that whenever the peristaltic motion was excited by the laxative, the gripings ceased; and besides the catharsis a free diaphoresis was kept up by the medicine; this last was encouraged by warmth. In the summer of 1796, I settled in this place (Utica). In the autumn of that year, dysentery was very prevalent, and as I was informed proved fatal in many instances on the north side of the river. In the extent of four miles along a road, at that time thinly inhabited, I was told that twenty-four deaths had taken place from dysentery. About the 10th of July, H. S. requested me to visit his wife, who was attacked with the disease. I found the woman, as I then thought, fast approaching her end; petechiæ were discernible on the abdomen; the disease seemed to have reached that putrid state, in which there is little hope. I advised

doses of the neutral mixture, given alternately with a dose of bark every half hour, a fermenting cataplasm to the bowels, and at the same time a strong decoction of cinchona, mixed with the watery solution of opium, to be kept in the rectum. This woman was spared to raise a number of children, and is still alive. In September, 1797, while lying with a boat in a small inlet on lake Sinclair, in upper Canada, I had a severe attack of dysentery: here again the neutral solution gave me the same relief which I had before experienced from it.

Since that time I have had many opportunities of seeing dysentery, but have not encountered a fatal case in an adult. I will now, gentlemen, by adding to my own experience what I could glean from the opinion of others, (and I have examined some authorities on this subject,) submit to you the course that I intend to pursue in the treatment of this disease. If called at the commencement or within a short time thereof, if the patient is in the vigour of life, of a robust frame, and especially if a stranger from a climate in which dysentery is not endemial, I will use the lancet freely; not with the hope of removing the disease, but peradventure to obviate the evil consequences of congestion, and to prevent inflammation. If the blood shews buff, I will repeat venesection till it disappear. Soon after venesection, I would immerse him in a tepid, or rather warm bath, cover his bowels with a flannel roller or jacket lined in front with fleecy hosiery, put him to bed, begin to ply him with the neutral mixture, which from thirty years experience, I pronounce to be the safest, the mildest, the surest, and at the same time, the speediest of all eccoprotics. I have succeeded in instances with this simple mixture, when the intestines refused to respond to large doses of drastic cathartics; if judiciously managed according to the excitability of the stomach it rarely fails, but its use must not be pushed so as to excite vomiting.

The neutral mixture must not be entirely discontinued till every symptom of the disease has disappeared, and stools are copious and well tinged with bile. The patient meanwhile must drink plentifully of some mucilaginous beverage, as barley

water, new milk whey, arrow root, linseed tea, or chicken water; he must avoid animal food, and all ingesta like to leave much excrement. The tenesmus must be relieved by anodyne and mucilaginous injections, sometimes repeated after every evacuation. These will not only allay the irritation in the rectum, but aid in keeping up the diaphoresi. If the neutral mixture should not have the wished-for effect on the skin, after it has regulated the peristaltic motion, allayed the spasm, and solicited as it were the liver and other viscera to perform their duty, its operation on the surface might be aided by some doses of the compound powder of ipecacuanha, and the hepatic functions spurred up by the blue pill, or submuriate of mercury. If your patient has been worn out by previous disease, or his constitution impaired by an unhealthy climate, if he is old, weak, or emaciated, the lancet must not be used. Should the disease resist this treatment, cover the abdomen with an epispastic. If the disease alternates with the ague or puts on a putrid appearance, let the bark be freely used both by mouth and enemas. When the skin is free, the intestinal discharges copious and bilious, your patient is out of danger. Do not be afraid of weakness by keeping the body loose. Diarrhœas have cured thousands, and experience will prove to you the correctness of Hamilton in his treatise on the use of purgatives. I have met with more instances of mischief arising from too suddenly correcting diarrhœa, than from permitting it to take its course. You will perceive that according to the plan pointed out, the first indication is to relieve the pain, arrest the griping, remove the spasms of the intestines by exciting and restoring the regular peristaltic motion, at the same time to remove any irritating substance that may happen to remain in the primæ viæ, to solicit as it were the liver and other viscera to perform their offices and to afford the natural stimulus which in a healthy state enables the tube to prepare and propel the ingesta. The second indication is by creating a determination to the surface to relieve the internal organs, and if I am correct in my opinion, to restore tone to the

nerves and vessels on the surface, and by sympathy to those of the chylopoietic viscera. These are the objects I have had in view, in the treatment of dysentery. But should more light be thrown on the subject, a different view taken of it, or a better plan of treatment be pointed out, I will relinquish mine, although the result of an extended experience, during which I have had no reason to regret its inefficiency.

ART. III.—ACCOUNT *of the Introduction of the* YELLOW FEVER *into Pensacola and New-Orleans in the year* 1822. By P. S. TOWNSEND, M. D.

The only places in the United States which suffered from Yellow Fever in 1822, were the seaports of New-York, New-Orleans, and Pensacola. The importation of the disease into New-York from Havana has been proved by abundant and conclusive testimony, the details of which may be found in several publications written on this subject. Information was wanted concerning the source of the disease in New-Orleans and Pensacola. That information has now been obtained through the politeness of George De Passau, Esq. of New-Orleans, who has transmitted to me a number of public documents and interesting facts, the result of his inquiries, and which go to show that the yellow fever of Pensacola was imported from Havana and thence carried into New-Orleans.

The Board of Health of New-Orleans in a sensible report made to the Louisiana legislature, under date of Jan. 15th, 1823, stated this as their belief, in the following manner:

"The researches made by the board at the commencement of the late epidemic, lead them to believe that the yellow fever was imported towards the end of August last, by a vessel from Pensacola, arrived at the basin of Canal Carondelet, where this disease showed itself in a family by the name of Lynch, passengers in said vessel. This family, of which every member but one fell victims to the yellow fever, had been removed to Bienville-street, where the disease

first broke out and spread to the different parts of the city; striking in its way every *stranger* and *unacclimated* person, who were alone the victims of this scourge." They afterwards make the whole amount of deaths eight hundred and two. On the 15th of Feb. this statement was fully corroborated by a letter which appeared in the *Louisianian* newspaper, under the signature of Mr. Perroquet Alba, of Pensacola. That gentleman gives a circumstantial account of the origin and progress of the yellow fever at Pensacola, together with the manner in which it was re-imported from that town into New-Orleans.

"Towards the 19th or 20th of August," says Mr. Alba, "the schooner Eliza sailed from the quarantine with a number of Irishmen and other persons on board, flying from the fever for New-Orleans, and during the voyage, or in performing quarantine at Fort St. John, she lost five of her passengers. Previous to her arrival at New-Orleans we learned that they enjoyed the most perfect health in that city.—This news was the more pleasing to us, as our nearest relations and best friends are always there. In effect, the schooner Thorn arrived in Pensacola and informed us that the yellow fever was making the greatest havoc there, occasioned by the arrival of the Eliza. The period at which the fevers generally manifest themselves at New-Orleans being too far advanced to allow us to doubt of its being imported there from Pensacola; and the atmosphere of Pensacola is too pure for such a fever to have prevailed there if it had not been imported."

No one has ever doubted that the position of New-Orleans, on an extensive marsh sunk several feet below the banks of a gigantic river, to whose inundations it is constantly liable, together with its climate, the description of population of which it is composed, the habits which prevail there, and the incessant influx of strangers who come down the river or from the northern states, form together one of the most favourable combinations that can possibly be found in any other part of the world, for the production and spread of dis-

ease. Nor has any one ever pretended to doubt that all those morbific causes, to which the believers in the domestic origin of yellow fever ascribe that disease, may be found in this ill-fated city in the greatest profusion and perfection. Fruitful, however as are those alleged sources of yellow fever, there are many years in which the city has been totally exempt from its ravages, when all these causes have been operating with the greatest activity and force. Is it then a disease indigenous to New-Orleans? If it were a disease produced, as is the common opinion of those who advocate domestic origin by the action of a powerful sun upon local impurities, aided by a humid atmosphere, ought it not to have appeared this year in New-Orleans before the last of August, when these elements in this hot climate had been in violent fermentation and concoction for *upwards of three months?* In New-York, which is *eleven* degrees higher north than New-Orleans, and where the intensity and continuance of atmospheric temperature are diminished in the same proportion, and where every circumstance connected with its topography conspires to the preservation of health, the disease commenced early in July; but in New-Orleans where there was a co-existence and co-operation of all those conditions which are supposed to be necessary to engender yellow fever, the pestilence did not develope itself until just at the commencement of autumn, and after it had been prevailing to an alarming degree in Pensacola. When we consider the proximity of New-Orleans to the West Indies, its uninterrupted and extensive trade with those islands, and above all the utter insufficiency of its quarantine regulations, we have great reason to wonder that it should ever escape this disease. According to the report of Dr. Forsyth to the President of the Board of Health, dated December 31, 1822, there arrived during the summer at the quarantine ground, a very considerable number of infected vessels, of which the following will serve as examples:

Sloop *Hope*, from Port-au-Prince, arrived May 1st.—lost on the voyage by yellow fever all her officers and men except one—detained *fifteen* days!

Brig *Bull Dog*, from Vera Cruz, arrived 20th July—lost two supercargoes and two seamen at Vera Cruz, two more on the passage, and two the day of her arrival—detained *seventeen* days!

"Every effort (says Dr. Forsyth) was made by me *with the means placed at my disposal* to execute the law by preventing as far as I could, intercourse with the infected vessels, and keeping passengers and seamen from leaving their vessels to enter the city. This, however, *was not practicable in all cases*, as is but too well known to the board." He furthermore observes: "On the subject of the purification of the infected vessels, I regret to be obliged to say that I was unable, from the want of suitable stores, to execute the provisions of the code of health in the manner prescribed. The holds of the vessels which are generally the abiding place of contagion, could not be fumigated with effect, much less whitewashed, without discharging their cargoes. *They were therefore obliged to be permitted to go into port without the necessary precautions being taken;* and it rests with the Board to decide what influence vessels entering the port in this situation, may have had in producing or aggravating the malignant epidemic which afflicted the city."

The above extracts from Dr. Forsyth's report, will serve as examples of the extent to which disease is imported, and restrictions imposed at New-Orleans. The necessity of long detention at quarantine of vessels infected with the poison of yellow fever, is now universally admitted as a fundamental and indispensable provision of every well-organized system of health laws. Some recent facts, however, give us reason to question the possibility of disinfecting the holds of ships by fumigation or expurgation, however sedulously, or for however long a time, these processes may be applied.

The Board of Health, aware of the imperfection of the quarantine code, recommend its revisal in their report to the legislature already alluded to.

The same report asserts in the most unqualified terms, the contagiousness of this disease. "All at once," say the Board,

"the yellow fever showed itself in a manner to induce more than ever a belief in the contagion of this cruel malady, before which every remedy by which it was attempted to be combatted, failed."

It does not appear that they are at all squeamish in avowing this opinion, or that they lack penetration in fathoming the motives of those who maintain the hypothesis of domestic origin.

"The Board of Health believe it their duty to do away the impression made by interested persons to induce a belief in the inutility of the powers which you have so wisely conferred on the board for the establishment of quarantines, which these persons wish to see destroyed, supporting their arguments on the opinion of certain physicians who pretend that the yellow fever is not contagious. This opinion is diametrically opposed to that of the Board of Health, who believe that the yellow fever is contagious, and that the establishment of quarantines is necessary to prevent its introduction."

The importation and introduction of yellow fever into Pensacola, is ascribed to several infected vessels, none of which it appears had been subjected to detention at quarantine. Mr. Alba informs us, that up to the 12th of August the town was in the most perfect state of health. In the short space of two weeks succeeding this date, there arrived several infected vessels. The first was the *Alabama cutter* from Havana, which port was then sickly. Three or four days afterwards, her captain sickened, was brought on shore by Dr. Bronaugh and recovered. A few days after the schooner *Franklin* of Boston, also arrived from Havana. Two days afterwards she lost a man of yellow fever. The fever commenced in the town about the 15th of August. A number of other facts are related by Mr. Alba, which, however, our limits do not permit us to transcribe.

It may not be irrelevant, however, to add, that a certificate is appended to Mr. Alba's letter signed by two respectable gentlemen of New-Orleans, and dated February 14th, 1823, in

which it is stated that Mr. Alba was a member of the City council and board of health of Pensacola, during the time the yellow fever prevailed there; and that they were witnesses to the truth of the facts contained in this letter.

The quarantine at Pensacola scarcely deserves the name; but Mr. Alba says that it is their intention "if possible to prevent in future every summer, the introduction of the yellow fever by establishing a strict and rigid quarantine, since they are perfectly satisfied that these fevers are contagious."

The unusually healthy position of Pensacola has hitherto saved it from those calamities which the want of a medical police would have otherwise entailed upon it. Nearly an hundred years ago, its proverbial salubrity obtained for it the name of the *Montpellier* of that part of North America, and events have since fully justified the epithet; for during all that period, it has scarcely ever felt the scourge of yellow fever. It appeared once in 1764, and not again until two or three times within the last few years: when owing to the accession of the Floridas to the United States, the original and acclimated population of the town were replaced by emigrants, who flocked hither from the northern parts of the union.

Art. IV.—Journal *of* Medical Cases, *occurring in a Voyage to the East Indies, in the year* 1819, *on board of the ship Neptune.* By James Eddy, M. D. of New-York.

The following cases are not offered as being of rare occurrence, nor for any novelty in the treatment adopted. They may all be traced to the same cause, viz. *transitions of climate*, and on that account, perhaps, may not be deemed altogether uninteresting.

The principal motive that has led me to present this short journal to the public is, that it may be an inducement to our naval surgeons, who have such ample opportunities of witnessing the effects of transitions of climate on the human frame, to contribute severally to the general stock, their observations

on this interesting subject, and by that means further the march of medical science.

I regret having mislaid the notes of the state of the thermometer for the months of May and June. I find noted however, that the weather was cool off the coast towards the latter part of May, when we left the capes of Delaware; and that we crossed the equator the latter part of June; the rain poured down in torrents most of the last week in June, and the weather was extremely sultry, the thermometer ranging from 80° to 86° during that period; there was but little wind, and we were becalmed for several days. These are usual occurrences near the equator, and vessels take this opportunity of filling their empty casks with rain water, for the use of the live stock,* &c. The crew as is the case in merchant East-Indiamen, were mixed, composed partly of boys and old seamen; they were all in good health on leaving Philadelphia.

June 13.—*Rheumatismus.* A—— F——, about 32 years of age, of a robust and plethoric habit, has been treated for the last two years by several practitioners at different places, without experiencing any material benefit; the feet, knees, arms, breast, and back, alternately affected: the complaint is now brought on by exposure to damp weather; pulse 90 and tense, skin hot, tongue slightly furred, bowels costive, urinary discharge scanty and of a turbid yellow colour, abdomen enlarged and tense. Refused to be bled. ℞ Pulv. rhei. 3ſs. sub. mur. hyd. gr. viij. Had no effect in four hours, and was repeated; enjoined strict abstinence.

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* As good water is of the utmost importance at sea, it may not be amiss to mention, on the authority of Sir Gilbert Blane, that the most simple and effectual method of preparing casks for holding water, is to let them stand for some time filled with *sea water*.—Diseases of Seamen p. 326.

It is the custom with commanders of vessels, when the fresh water is used, to have the casks filled with salt water, merely with the view of trimming the ship; but they are not aware generally, that a two-fold purpose is effected by this means.

14th.—Medicine operated freely, general symptoms rather more favourable; difficulty in passing water continues. ℞ sp. nit. dulc. ʒij, half a tea-spoonful to be taken three times a day in a little water. ℞. sup. tart. potass. 3ij. to a quart of boiling water, agreeably sweetened, to be drank cold through the day.

15th.—Tongue clean, pulse 86 and soft, skin natural heat, bowels open, urine of lighter colour and passed more freely; pains relieved and more confined to the feet: same remedies continued.

18th.—Has continued the use of cream of tartar for common drink, and is doing well.

The patient at a subsequent period, at Batavia, experienced great benefit from the following recipe, which operated by inducing a profuse perspiration and keeping the bowels freely opened.

℞. Sup. Tart. Potass. ʒij.
Flor. sulph.
Sulph. hyd. nigr. $\overline{aa}$ ʒi. M. in a quart of molasses; from one to two table spoonsful to be taken at bed time.

Remarks. Venesection as stated above was advised, but the patient would not submit to it: it is most probable had not the weather been remarkably fine and mild immediately after the attack, that the inflammatory symptoms would not have subsided so speedily. The sup. tart. potassæ in small doses, I have generally found to operate more favourably on the urinary organs, and likewise to keep the bowels soluble, than when administered in the quantities usually recommended. There occurred also another (slight) case of rheumatism. Both were checked during *cold*, and returned in *warm* weather.

Lichen Tropicus. Thermometer 80° to 86°; weather close and sultry; latitude 2° 4′ north of the equator. Every person on board was more or less affected with this eruption. It assumed, however, in some, a different appearance from what is generally noticed; while the body and arms were completely covered with the small red papulæ, the neck was invested with large reddish-brown patches. By keeping the bowels open, and mak-

ing use of a cool regimen, the intolerable itching, heat, &c. were in a great measure obviated.

Both Moseley and Cleghorn condemn cold bathing while the eruption is out; and the former mentions the case of a gentleman, a native of the country, (W. Indies) who, by bathing in the river in the month of July with the prickly heat on him, had the eruption repelled; in consequence of which, a tedious fever with an affection of the brain was induced, and although he recovered, his mind was for a long time afterwards impaired.*

It is with the greatest deference I dissent from the high authority of such practical and enlightened philosophers: experience however justifies me in asserting, that I have known numerous instances, (and myself among the number) of persons bathing with impunity during the *continuance* of the eruption.

No one at all acquainted with the salutary operations of nature, will question the imminent danger of repelling any cutaneous disease on its first appearance; but after its continuation for some time. the same remedies, which would at the commencement have been injurious, are then resorted to with beneficial effects. It was the general custom with foreigners, while residing at Batavia, to make use of cold bathing daily, after eight or ten days had elapsed from the commencement of the prickly heat; care was observed not to be overheated at the time, and immediately after rising in the morning was chosen for that purpose; the body was well dried, and by wearing flannel, the determination to the skin was kept up, which prevented any ill consequences; a fine glow was imparted to the whole system, and through the day the body was much cooler and more refreshed than it would otherwise have been, had the bathing been omitted.

July.—State of the weather; the thermometer (Fahrenheit's) highest at the beginning of the month—at noon 68° ; towards

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* Moseley on Tropical Diseases, p 20.

the latter end we were off the cape of Good Hope, heavy rains, with hail and snow; 49°, lowest at 8 o'clock A. M.—medium through the month 56°.

*Paronychia.** This painful inflammatory swelling has not been noticed by medical writers as an affection of seamen, or of their being at all subject to it; but from many instances which have come within my observation, I am inclined to think it occurs frequently among that class of persons. It is more peculiar to raw seamen, or those who have made but one or two voyages to the East Indies, though I have sometimes met with it in the more hardy and aged sailor.

It is not my intention to enumerate the different species of Paronychia, or mention the different views of writers on this subject, but merely to trace the causes which produced it on the voyage.

Mr. Samuel Cooper says that "whitlows often originate from external causes, such as bruises, pricks, the lodgment of a thorn, or bit of glass, &c. but in general the complaint occurs without being preceded by any assignable cause whatever."*

Dr. Dorsey is more concise and satisfactory on this subject than any author I have met with: he mentions that *vicissitudes of temperature* frequently occasion it, and adduces as an illustration of the fact, that he found more cases of whitlow among *washer-women* than in any other class of persons.†

I am of opinion, that to vicissitudes of temperature solely may be ascribed the production of this disease in seamen. Out of twenty cases that came under my observation, but one could be traced to external injury. In this instance a prick with a a sail-needle was obviously the exciting cause.

Vessels bound to the East Indies usually leave our ports in the months of March and April, or early in May, when the wea-

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* Occurred in June, July, and August, referrible to the 1st and 2d species of authors.

* Cooper's Surgery, vol. ii. † Dorsey's Surgery, vol. ii.

ther is frequently cold, especially on the coast; but steering to the southward soon experience warmer weather. In crossing the equator the heat is intense, attended with rainy and sultry weather; again, in doubling the Cape of Good Hope in July or August, hail and snow, the winter attendants at this time of the year at the Cape, produce a material change in the atmosphere; and shortly after they encounter the sultry clime of the tropics.

The sudden transitions of temperature, the handling of ropes and sails, at times drenched with rain, and almost immediately after stiffened by ice, afford I think a satisfactory elucidation of the position I have advanced.

Treatment. If called on at the commencement, a blister to the part and repeated if necessary, generally succeeded in preventing a further progress of the inflammation, and of speedily subduing the disease. When matter was formed, a free incision into the part for its evacuation afforded great relief, a flaxseed poultice was then applied, and kept constantly wet with tepid vinegar and water with the addition of laudanum; the patient was put on a spare regimen, and the bowels kept open by occasional doses of sulphate of magnesia; and when the pain (as was in general the case) was excessive, a large opiate at bed-time procured a tolerable night's rest; where no fluctuation was perceptible, and the parts much inflamed and painful, a crucial incision in the seat of the pain as recommended by Richter gave instant relief.

Cynanche Tonsillaris. 17th July, P—— S——, about 24 years of age, of sanguine temperament and slender form, complains of stiffness of the neck and soreness of his throat, uvula relaxed, slight fever. Sulph. magnes. ℥i. Apply vol. liniment to the throat.

19th.—Tonsils enlarged, countenance flushed, skin hot, secretions diminished, pulse 100, full and hard, tongue dry and foul, difficulty of breathing and swallowing. V. s. ℥xxiv. Sulph. magnes. ℥i. Blister to the throat; allow him nothing but barley-water.

21st.—Relieved, pulse 88 and soft, bowels not freely opened, skin rather hot. ℞ pulv. antimon. et sub. mur. hyd. $\overline{aa}$ grs. iv. M one every four hours.

22d.—Much better. Sulph. magnes. ℥i.

24th.—Convalescent.

August.—State of the weather—at the commencement of this month doubling the Cape of Good Hope very boisterous weather, cold and heavy rains with hail and snow. During the squalls the thermometer fell from 3 to 4 degrees; 7th, off the island of St. Paul, thermometer at noon 47° ; on the 18th at the same hour within the tropics 68°, and on the 25th in the straits of Sunda 90°, at 3 o'clock P. M. From 7th to 25th, difference of 43 degrees. Every one on board complained of headache and sore eyes, arising from the sudden transition of climate.

Cynanche Tonsillaris. 8th August, contrary to my advice the patient before mentioned went on duty too soon, more especially as the weather was cold, wet, and disagreeable, the consequence was, that the right tonsil became inflamed, and after suffering it to increase for three or four days, he acquainted me with the circumstance: it was much enlarged, and suppuration had taken place; the abscess was opened with a lancet, by which the patient experienced immediate relief, made use of a gargle of decoction of figs with borax, vinegar, and tincture of myrrh.

9th.—Pulse regular, appetite good, bowels open, complains of soreness of the opposite ear to the tonsil affected. Vol. linim. to bathe the throat.

12th.—Evacuated the matter from the left tonsil; small white ulcers appear; use a gargle tincture of myrrh and water.

14.—Bowels open, pulse rather feeble and face pale, complains at times of being chilly, appetite pretty good; tinct. cort. peruv. three tea spoonsful four times a day in wine; give him better nourishment.

16th.—Dismissed, cured.

Febris. 24th, J—— R——, 2d officer, about 25 years of age, full habit and sanguine temperament; fever, pain in the head, chest, and back; ℞ pulv. purg. ʒfs. sub. mur. hyd. gr. viij.

25th.—In the Straits of Sunda; no better, very restless, pain in the head and back continue, eyes red, face flushed, throbbing of the temples, and twitches across the abdomen, pulse strong and full, tongue white, urine high coloured and passed with difficulty, skin parched. V. s. ʒxvi. Sp. nit. dulc. thirty drops every two hours; as he had not slept for the last forty-eight hours, an anodyne was prescribed in the evening.

26th.—Is better, but complains yet of pain in the head, tongue furred, pulse softer, bowels costive; ℞ pulv. antim. et sub. mur. hyd. aa gr. iv. one every two hours. Afternoon; bowels open, perspires freely, passes his urine with less pain and in greater quantities; continue sp. nit. dulc. as before, and sup. tart. potass. mixed with water for common drink.

27th.—Feels debilitated, slight fever, urine of bright yellow colour, but copious, says he has swimming of the head; Infus. anthem. nobilis.

29th.—Tongue clean, no pain whatever, very weak; Tinct. cort. peruv. Convalescent.

Remarks. I must confess that I little expected to find pure Synocha in this portion of the globe; and that venesection was resorted to with some apprehension of the result. The thermometer standing at 90°, and within 100 miles of Batavia, the destructive climate of which had so invariably swept off those newly arrived from northern regions, had induced me to believe more especially from the impressions I received from the perusal of the writings of a celebrated author,* prior to my visit, that I should have to resort to the most powerful means to counteract *debility* and *putrescency*. Those errors happily

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* Lind, who strenuously opposes blood letting in diseases of warm climates, and relies chiefly on bark. The principal result of Dr. Clarke's experience, says Dr. L. is that bark may be given with advantage in fe-

vanished as the mists of the morning dispelled by the beams of truth and experience.

It was my intention to have subjoined a topographical view of the island of Java, with remarks on the endemic of Batavia, dysentery, and the diseases incident to the Javanese or natives; purporting however, to revisit the East Indies, I have thought it most proper to retain the facts already in my possession until a more enlarged experience will enable me to give a more comprehensive and satisfactory view of the subject.

New-York, April, 1823.

Art. V.—On *the use of Mercury in* Onychia Maligna. By John B. Beck, M. D.

There is a species of Onychia not commonly described in the books, of which Mr. Wardrop of Edinburgh has furnished a very accurate account,* and to which from the obstinacy and malignity of its character, he has given the appropriate name of Onychia Maligna. In the treatment of this affection he remarks, that the only local means which he had found to relieve the patient, were the evulsion of the nail and the subsequent application of escharotics to the ulcerated surface. Even this treatment, painful as it is, seldom succeeds, and the pa-

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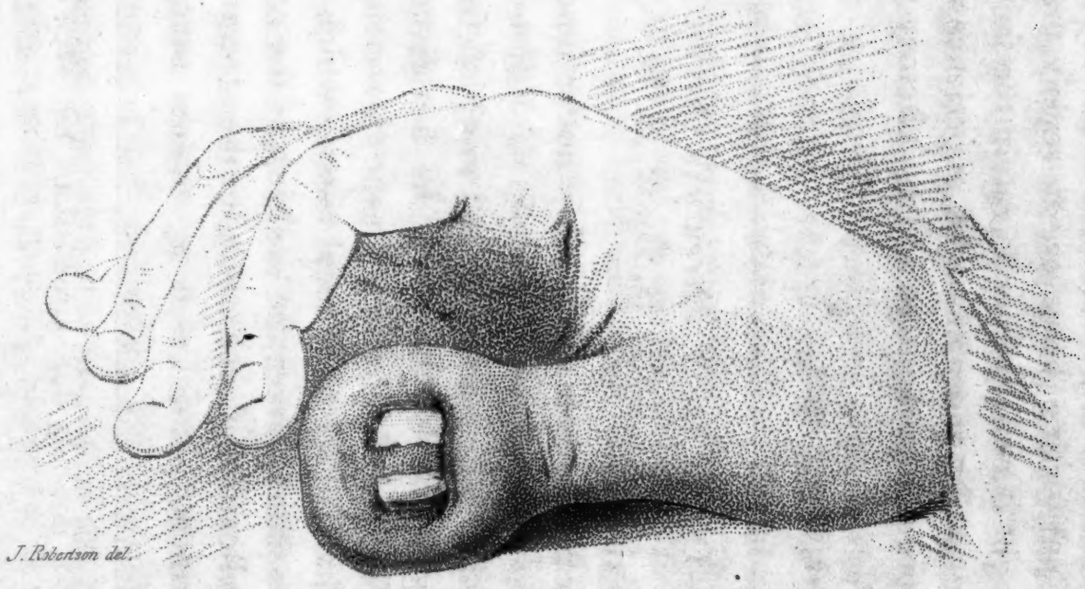
vers in India, not only during remissions, but even during the *exacerbations* of the fever, and where the fever is *continual*. Lind on hot climates, p. 83, last edition.

As Dr. Lind makes no comment on this strange practice, the inference is that he approves of it; and indeed his decided disapprobation of venesection, with the reiterated eulogies on bark, evidently confirm it. Far be it from me to speak disrespectfully of a writer of such acknowledged merit, but as such glaring inconsistencies in practice, tend to bewilder the young practitioner, they should not be overlooked.

* An account of some diseases of the toes and fingers, with observations on their treatment. By *James Wardrop, Esq.* of Edinburgh. London Medico-Chirurg. Trans. vol. v.



Onychia Maligna.

tient is after all obliged to submit to amputation. In consequence of the great intractability of this troublesome complaint to the methods in ordinary use, Mr. W. was induced to try the effects of mercury given internally. The success of the experiment seems to have been perfect. As soon as the system became affected by the mercury, the ulceration assumed a healing appearance, and the bulbous enlargement gradually subsided. Mr. Wardrop concludes his remarks by stating, that "how far this treatment may be found successful in all cases of this disease, can only be determined after considerable experience. I am persuaded, however, that there are cases wherein it will be found an efficacious remedy." Believing the treatment suggested by Mr. W. to be a very valuable and important improvement in relieving a serious malady, I have thought it adviseable to confirm its safety and efficiency by the record of a few cases which have occurred in my own practice, and that of some of my friends. I am induced to do this more particularly at the present time, because I have reason to believe that the practice is not generally known in this city. At any rate, I had the mortification of finding not long since, in the case of a little patient whom I was treating in this way, and with every prospect of success, that one of our *cutting* surgeons who had been consulted without my knowledge, had actually amputated the finger before my next visit!

The origin and progress of this disease is so accurately described by Mr. Wardrop, that I shall make no apology for introducing it. "The commencement of the disease is marked by a degree of swelling of a deep red colour of the soft parts at the root of the nail. An oozing of a thin ichor, afterwards takes place at the cleft formed between the root of the nail and soft parts, and at last the soft parts begin to ulcerate. The ulcer appears on the circular edge of the soft parts at the root of the nail, it is accompanied with a good deal of swelling, and the skin, particularly that adjacent to the ulcer, has a deep purple colour; the appearance of the ulcer is very unhealthy

the edges being thin and acute, and its surface covered with a dull yellow or brown-coloured lymph, and attended with an ichorous and very fetid discharge. The growth of the nail is interrupted, it loses its natural colour, and at some places appears to have little connexion with the soft parts. In this state," he adds, "I have seen the disease continue for several years, so that the toe or finger became a deformed bulbous mass. The pain is sometimes very acute, but the disease is more commonly indolent, and accompanied with little uneasiness: this disease affects both the toes and the fingers. I have only observed it on the great toe and more frequently on the thumb, than any of the fingers. It occurs, too, chiefly in young people, but I have often seen adults affected with it."

Of the cases which have come to my knowledge, four were of the age of ten years or under, and one of the age of twenty-three. In one case the disease affected the thumb; in a second the great toe, and in the remainder the fingers. In no case have I found the patients to complain of much pain. This is a very peculiar circumstance in a disease of so malignant a character; and it may be looked upon as an almost infallible diagnostic between it and the common forms of onychia.

Case I. Decatur Frazer, a boy ten years of age, in July 1821, ran a small splinter, by accident, under the nail of the right thumb; in a few days the parts about the root of the nail assumed a livid colour, and at the same time began to swell, and afterwards to ulcerate. From this time the swelling gradually increased, and the discharge became more copious and offensive. In this state it continued until about the beginning of January 1822, a great variety of local applications having been made in the mean time, without the slightest advantage. At this time the little patient was placed under the care of my friend Dr. James Kent Platt, at present Professor of the Institutes of Surgery in the University of Vermont. The extremity of the thumb had assumed a bulbous appearance, and was about double the natural size. The nail had separated in the middle and was quite loose. The matter

discharged from the ulcer was thin and extremely offensive; so much so as to require frequent dressings during the day. There was no pain complained of, except a slight sensation of it whenever the ulcer was cleansed and dressed. Judging it to be a case precisely analagous to that described by Mr. Wardrop, it was determined to have recourse to mercury. The blue pill was accordingly commenced with. Several of these were taken, but from the negligence of the parent of the boy, without any regularity. No effect was produced upon the gums, and no improvement visible in the appearance of the thumb. Being obliged to visit the West Indies for the benefit of his health, Dr. Platt now requested me to attend the patient. I continued him under the use of the blue pill for a few days, but without any apparent advantage. The mother now became impatient, and declined giving any more mercury for the present. After an interval of five or six weeks I resumed the use of mercury in the form of pills composed of calomel and opium in the proportion of one grain of the former to one-eighth of a grain of the latter, three times a day. In about ten days the mouth became affected, and a pretty free salivation ensued. Almost instantaneously upon this effect being produced, the ulcer put on a different appearance. In a few days the discharge from it ceased completely, and in about three weeks the whole had healed, and the swelling almost entirely subsided. Between two and three months after this a new nail had grown out, and the thumb has remained healthy and sound to the present day.

The appearance of the diseased thumb is represented in the accompanying plate.

Case II. James Reden, aged six years, has onychia maligna on the second finger of the right hand. The end of the finger is much enlarged beyond the natural size; has a bulbous appearance, and around the ulcer, is of a livid shining appearance; the nail is loose and the ulceration around it discharges large quantities of fetid matter. The mother supposed it to be owing to the finger being caught in a door: five weeks after

the injury, it began first to inflame around the root of the nail, and the extremity of the finger to swell. There had been no pain in it from the beginning, except when irritated by dressings, &c. Poultices, and other local applications had been used to no purpose. In this situation it had remained three months, when application for advice was made at the Dispensary in April, 1822. At my suggestion, Dr. Torrey, to whose district the patient belonged, began the administration of calomel and opium, with the view of producing salivation as speedily as possible. As large doses as the child could bear were accordingly given; in three days the gums were affected, and in three or four days after this the discharge ceased and the ulceration began to heal; the swelling also, gradually subsided, so that in three weeks it was of the natural size, and at a still later period the nail began to grow. The mouth was kept sore in this case about a fortnight.

Case III. In consequence of the success attending the preceding case, Dr. Torrey was induced to have recourse to it in a lady aged about twenty-three, who was troubled with this form of onychia on the great toe. In this case the disease seems to have arisen spontaneously, at least without any known cause. As in the other cases, the ulceration commenced at the root of the nail, and gradually extended around and under the nail, and discharged large quantities of offensive matter. The toe became very much enlarged in size, and had the bulbous appearance. There was but little pain experienced except in walking. In this condition it had remained about five or six months, during which period poultices and cerates had been very liberally applied.

The patient was now advised by Dr. Torrey to commence the use of mercury. She accordingly took the blue pill, until her mouth became slightly affected by it; the toe assumed at once a different appearance; diminished in its size, and began healing rapidly. As however the affection of the mouth had been extremely slight, and the patient had immediately desisted from the use of the mercury, the disease returned again in a

few weeks pretty much in its original form and appearance. After an interval of about a month, mercury was again administered, and with precisely similar results. Owing to the prejudices and inattention of the patient, the mercury was again suspended, as soon as the least tenderness was felt in the gums; while this continued, the amendment in the toe was as prompt and decided as before, but as this soon subsided, the disease again returned.

Convinced of the efficacy of the treatment from the relief which she had experienced, as well as of the necessity of continuing the mercury longer than she had done, the patient now submitted herself entirely to the direction of her physician. Mercury was again used until slight salivation was produced, which was continued until the disease was completely removed. No symptom of it has returned to this day. The whole continuance of the affection in this case was about nine or ten months.

Case IV. Mary Bolan, aged five years, has onychia on the first finger of the left hand; the nail came out about two months previously to her applying at the Dispensary; the extremity of the finger is of a livid colour, and much enlarged; the site of the nail is ulcerated and discharging offensive matter. In this case mercury in the form of blue pill was given, until the gums were slightly affected, when the discharge was arrested and the ulcer healed.

Case V. E—— M——, aged ten years, ran a needle into the extremity of the second finger of the right hand, which at the time caused profuse hemorrhage, and afterwards degenerated into onychia maligna. The end of the finger was very much enlarged, the discharge from the ulceration copious and very offensive, unattended by any pain. In this state the finger had remained for several months, without being at all improved by a great variety of local domestic applications. In January 1822, the case came under my attendance, and I put her immediately upon the use of the blue pill, which she took for eight or ten days. Before however the gums were affected, the mother became impatient and hurried away without my

advice or knowledge to a surgeon of this city, who immediately relieved the patient by amputating the finger!

From the very exact resemblance which this case bore to the other cases, which I had seen cured by mercury, I cannot entertain the smallest doubt that the disease would have yielded immediately upon salivation being produced.

The foregoing cases, together with those recorded by Mr. Wardrop, seem to me to furnish very conclusive evidence in favour of the mercurial treatment of this disease. To ensure success, however, the mercury must be properly administered. Judging from what I have seen, the rule necessary to be observed is, to affect the mouth, and to keep up this action until the cure is completed; unless carried to this point I have never seen any good effects from the use of mercury in this complaint.

With regard to local applications, little need be said. In a majority of the cases just related, the ulcers were merely cleansed with soap and water, and dressed with simple ointment. In one case the yellow wash was used, and with advantage. It may not be improper to state that in one of the preceding cases, the patient submitted to the excision of the nail, and afterwards to the application of caustic. This painful operation was performed twice, unattended however, by any benefit.

ART. VI.—CASE *of* PHLEGMASIA DOLENS, *alternating with Pneumonic inflammation.* By ABRAHAM D. WILSON, M. D. of New-York.

THE subject of this disease was a lad of about seventeen years of age, of a delicate and nervous habit, an apprentice to a hatter. His employment had rendered him peculiarly liable to catarrhs.

About the middle of the month of June last, he imprudently exposed himself to a strong current of air while in a state of excessive perspiration. He found himself on the next morning affected with a cold, producing considerable catarrhal and

pneumonic inflammation; this was entirely neglected. It may be observed, that in consequence of previous indisposition with colds, he had for some time suffered severely with pain in the breast, which was however not considered serious, or such as to prevent the performance of his ordinary employment. In this instance he observed that the cough and pain were more troublesome and violent than in any of his preceding attacks. Within thirty-six hours from the time in which he was indisposed with the pulmonic affection, a metastasis took place in the calf of the right leg, which became the seat of inflammation, and presented a remarkably white and glossy appearance. This metastasis was supposed, by his family, to have been induced by imprudently bathing the feet, on the day previous, in cold water. The slightest motion was accompanied with excessive pain. I did not see the patient until the second day of the disease, when no enlargement of the glands was manifest, and was informed that none had previously existed. The affected part of the limb was increased to twice its ordinary size, was tense and elastic, and communicated to the fingers a peculiarly singular feel; the pulse was frequent and hard. Viewing it as an inflammatory disease, the treatment was directed accordingly. A small venesection, saline cathartics and diaphoretics were had recourse to, together with the application to the part, of cloths dipped in oil. On the fourth day (the symptoms moderating) stimulating liniments and the roller were made use of, and continued until the seventh day, when the swelling totally disappeared. As soon as the fifth day, the symptoms of pneumonic inflammation returned, and though at first apparently slight, soon became seriously alarming. The case was then treated antiphlogistically, though with caution as to the use of the lancet, the patient being very much debilitated. The pulmonary irritation was in a few days subdued. Here, as will be observed, the pneumonic inflammation alternated with the affection of the limb; and during the active stage of the phlegmasia dolens all pulmonic irritation ceased. This case with

many others now on record, bears the most positive testimony in favour of the opinion lately adopted of the inflammatory nature of phlegmasia dolens. Moreover, the disease seems to arise from any sudden interruption to the secretions and excretions. Febrile irritation generally, if not always, accompanies the disorder; its terminations are those common to other inflammatory diseases, and it is most successfully treated by venesection, cathartics, diaphoretics, and such remedies as tend to lessen general excitement.

ART. VII. A METHODICAL *enumeration of the principal* PARASITICAL ANIMALS; read to the New-York Lyceum of Natural History, as the Zoological Lecture, on the 21st of April, 1823. By SAMUEL L. MITCHILL, M. D. President of the Society, Professor of Botany and Materia Medica, in the University of New-York, &c.

THE condition on which we receive life is, that we shall surrender it. Life is imposed upon us without our asking, and is taken from us without our consent. This mode of being is limited to vegetables and animals; for although it has been ingeniously contended by some writers, that minerals, more especially in their elegant and exquisite forms of crystals, are endowed with vitality, their reasoning has not convinced me.

Thus the individuals of these two kingdoms, enjoy a transitory and fleeting existence. The duration of the longest liver has been compared to a span; and the several species would, in the course of a generation, become extinct, were they not perpetuated by the irresistible propensity to procreation. Even under this strong impulse, several races seem to have been unable to continue themselves; and the relics discovered in a fossil state, are the only proofs that this world ever contained such inhabitants. In vain do we search the forest of our country for the mastodon, the ocean for the heavy-toothed shark, and the rivers for the antediluvian crocodile, whose skeletons, parts of which I possess, obtrude themselves on the notice of

agricultural improvers. While we admire the huge and curious remains of those individuals, we contemplate with no less wonder that display of power, which after having created them and many others, has doomed entire families to extinction.

Death to every living creature and thing, and the fatal disappearance in many instances of whole tribes, are not the only subjects for solemn meditation. The whole journey of life from the womb to the grave, is beset with distressful and often fatal accidents; with painful and frequently mortal diseases. Such is the weakness of organic structure, that the actual prevalence of some maladies, and the predisposition to others precede birth. In such cases the cradle receives a sickly or puny occupant, soon perhaps to become a tenant of the coffin.

It is not my intention to attempt on this occasion, an enumeration, far less a description of those disorders. Interesting as they are, they belong more properly to the province of the medical inquirer. My efforts will be directed toward the investigation of that branch of zoology, which treats of *Parasitical Animals*, or those animals which inhabit the bodies of other animals during a part, or the whole of their lives.

The face of the earth has been compared to a slaughter-house, and indeed the survey of the manner in which carnivorous quadrupeds, rapacious birds, voracious fishes, and gormandizing reptiles support their strength by the bodies and blood of the weaker creatures whom they make their prey, is calculated to establish that sentiment. Here instances innumerable are presented of the strong overcoming the weak, and of the predominance of physical force.

A peculiarity in the inquiry I am about to make, is the annoyance of the strong by enemies deemed weak and contemptible, of whose outrages not uncommonly, destruction is the consequence. These creatures oblige by their great numbers, or the vulnerable points they attack, obedience to their qualified or absolute dominion.

The animals whose history I am about to sketch, are called *parasitical*. The word is of Greek derivation. In the copi-

ousness and significancy of that admirable language, the preposition παρα, in addition to its other meanings, often conveys a sense of adverse or bad import, contrary to the word with which it is associated in composition. Thus παραακουω, whence comes our nosological word παρακυσις, signifies negligence of hearing, or over-hearing for a sinister purpose. Σπευδω is a verb which denotes good faith on entering upon a pact or treaty, and παρασπουδεω, means the violation or breach of such a pact or covenant. Φρασις signifies a speaking or writing directly to the point; and paraphrasis means a circumlocution, or talking about it and about it. Βουλη is the fair and open expression of a sentiment; and παραβολη a parable, the obscure signification of opinion on a subject; and parasite, derived from παρα, opposite or adverse, and σιτος, food or provision, is a compound, which denotes the creature, who without a stock of his own, lives upon the store prepared by another.

In treating of these plagues and torments, I shall not enumerate such creatures as gnats, flies, spiders, leeches, scorpions, and scolopendras, which occasionally extract blood or infuse poison, but confine myself to those that inhabit the bodies of animals during the whole or a part of their lives. However in making my observations, I shall not merely name the species which infest man, but treat also of those which appertain to other zoological and living tribes; yet I shall omit even such asare most remarkable for their appetite toward dead matter. Therefore, no mention will be made of the *Ptinus*, which makes great havoc in herbariums and museums of natural history; nor the *hister*, which lives amidst carcasses and dung; nor the *silpka*, noted for burying the dead bodies of small quadrupeds; nor the *dermestes*, that feeds upon dried flesh and peltries; nor the *staphylinus*, thriving upon excrement; nor the *anobium*, (byrrhus geoffr) preying upon planks, rafters, and other wooden materials of houses, and injuring libraries by piercing the books with small holes, as if bored by a wimble; nor the *phalangium*, destroying the mites which lay waste the herbariums and consume libraries.

The creatures to whose history I mean to invite your attention, belong chiefly to the five classes of

1. Crustacea,
2. Mollusca,
3. Arachnides,
4. Insects, and
5. Zoophytes.

For the sake of method and perspicuity, I shall consider them in this order and succession.

I. Crustaceous animals, living as parasites.—The greater part of the crustacea have a calcarious or horny crust or envelope. Between the dermos or skin and the epidermis or scarf-skin there is a secretion and lodgment, which in man is called the mucous tissue, exudation, or membrane. The epidermis being transparent, the beholders are enabled to view through it the calcarious deposit; which in nature, as well as in artificial preparations, displays such a variety and beauty of the colours, often brilliant and diversified, which decorate them. Their limbs are disposed by pairs, and consist of a hollow tube or pipe, to which the muscles are inserted, each joint containing those which move the next one. The articulation is by ginglymus or the hinge connexion, having only a backward and forward motion.

They have eyes, in some species simple and in others compound; and always distinct and often very long antennæ. They breathe by gills, and possess a double circulation of humours. They have generally ten or more legs.

Cyamus, or whale louse, which attaches itself in great numbers to cetaceous animals, and particularly to the skin of whales.

Cymothoa, or fish louse, which infest the gills and mouths of fishes, and fastens occasionally upon other inhabitants of the sea.

Idotea, nearly allied to the preceding, living in like manner, and by some naturalists confounded with them.

The greater part of these parasites belong to the Oniscus of Linnæus.

There is a species of *cancer*, or crab, which inhabits the body of the ostrea edulis, or common oyster, and some kinds of muscle or mytilus, especially in autumn. It is the C. pisum of Linnæus, and the *pinnothere* of Latreille. The figure is circular and pea-shaped, and the shell is frequently membranous. The ancients as well as the moderns have indulged various conjectures concerning the association between these little crabs and the molluscas they infest, upon which I shall not dilate.

II. Molluscous Parasites.—The *lepas balanoides*, and the *lepas balanus* adhere to the skin of whales, and destroy it sometimes down to the fat, some of which I possess.

Several *patellas*, more especially the P. *cymbiformis*, attach themselves to the limulus, or horse foot, but it is questionable whether they derive any nourishment from the point of adhesion.

The same remark applies to oysters that sometimes grow upon clams, (venus,) and to the sponges which are sustained by oysters.

III. The Arachinides, are distinguishable at sight from the crustacea and insects, by the want of antennæ. The external openings, (in the form of stigmata,) placed under the belly or at the posterior extremity of the breast, lead in certain species of them to sacs which perform the function of lungs; and in others to true tracheæ, branching through every part of the body. They mostly have eight feet, though some have but six; the females of certain others have an additional pair, but these only serve to carry their eggs; they are subject to metamorphoses like insects, but shed their skins like serpents and crustacea. In certain of them, two of their feet are not developed until some time after birth. They are not mature for generation until they have changed their coats four or five times. They mostly feed upon living prey, or by sucking the blood and other juices of different animals.

The *acarus*, L. comprehends the numerous and destructive family of the *Mites*.

The principal part of these animals are very small, so little as to be distinguished or discovered only by the microscope. They are distributed into various families. I proceed to their specific enumeration.

It is according to my own rule forbidden to mention that the acarus siro is the creature that devours cheese and meal, and which our admirable and estimable naturalists have often exhibited to view by aid of magnifying glasses. They are eaten in great numbers by our epicures.

The parasitical mites inhabit the skin and flesh of different animals, whom they frequently weaken very much by their excessive multiplication. Some species are considered as giving rise to certain diseases. They have been found in the brain and eyes of human beings.

The *acarus scabiei*, is the species that is supposed to cause that disease of the skin called the *itch*. A century and more ago, seignor Bonomo advanced the doctrine that the itch was animalcular. Latterly, Dr. Galleè in a formal dissertation, has shown that the mite of human itch placed upon the skin of a well person, will communicate the disease.

The *acarus exulcerans*, inhabits foul ulcers, and delights in nasty sores. It has been doubted whether they, in this case, are the cause or the effect. Be that as it may, it is easy to conceive how these vermin, even if they do not eat through to the quick in the first place, may cause great irritation and erosion afterwards. They have been known also to infest ulcers when they occur in horses, dogs, cats, and probably other animals.

The *acarus dysenteriæ* was long ago supposed to be an agent in the production of some sorts of dysentery. This species is said to inhabit vessels in which ale, beer, and other potable liquors are kept, and to pass thence into the alimentary canal.

Acarus gymnopterorum inhabits the bodies of wasps, bees, libellulas, flies, and various other insects.

The *acarus lactis* inhabits vessels where milk is kept, and is presumed to enter the mouth and stomach from stale and foul milk things.

The *acarus aquaticus* inhabits fresh water, in which it is a very brisk swimmer. With this fluid it is presumed it enters the body of man and other animals.

The *acarus acarorum* swarms on the bodies of the acarus crassipes, or big-footed mite. The acarus sanguisugus is reported to infest the legs of men in South America, sucking their blood.

The *acarus ricinus* infests neat cattle and dogs.

The *acarus reduvius* infests the same animals, and man himself.

To this family of the arachnides belong the A. *ixodes*, or wood-tick. They are found on shrubs, to the leaves of which they hold fast by two of their feet, and hold the others extended to seize the animals that pass along. Thus they lay hold of men, dogs, kine, and other quadrupeds; they even infest tortoises. They insinuate their sucker into the skin and flesh so deep and so tenaciously, that they can only be disloged by force, and in extracting them a piece of the flesh is also torn away. As they gorge themselves with blood, they acquire great increase of bulk, and assume a round oval or vesicular form. The females lay a prodigious number of eggs, and as M. Chabrier affirms, by the mouth; they sometimes multiply at such a rate as to destroy horses and kine, by exhaustion.

The *acarus autumnalis* lives upon grasses and other plants, whence he alights upon animals, and buries himself at the root of the hairs, causing intolerable itching, and causing the disease called the *rouget*.

IV. Insects form the fourth division of these tormentors.—They are known by a body composed of a head, trunk and abdomen. The head is furnished with mouth, eyes, and antennæ. The trunk supports the legs, which are articulated, and six in number; the centipede families of julus and scolopendra making exceptions. It bears also the wings, which in

the greater part of the class are four in number, except in the considerable order of diptera, where there are but two, and in the small order of aptera, where there are none. At the base of these are the stigmata or holes, for the admission of air to serve the purposes of respiration. These outer orifices send tubes to certain points or centres, as the two principal tracheas, which extend parallel to each other the whole length of the body. The abdomen, which except in the myriapodes, is distinct from the other parts, contains the other viscera and the parts of generation; and mostly consists of from six to nine segments, each divided into two hemispheres; it terminates among various species in a borer or sting.

Insects are remarkable for undergoing a metamorphosis; or regular series of changes, from the *ovum* or egg, through the states of *larva* and *chrysalis* to the *imago* or perfect insect; or a demi-metamorphosis, where a part only of the changes are wrought.

Among parasitical insects, *lice* or the several species belonging to the family of *pediculus*, are known to the greater part of persons. These have been usually placed under the order of apterous or wingless insects, but I observe in the prodromus to the history of epizootic insects by Professor Christian Ludwig Nitsch of Halle, they have been transferred curiously enough to the hemiptera.

They have no more than six legs, and are apterous; their abdomen is destitute of the articulated and moveable appendages of the *thysanoures*. They usually have four or two small glistening eyes; their mouth is, in a great measure, internal, and presents outwardly either an advanced muzzle or teat inclosing a retractile sucker, or two membranous approximated lips and two mandibles with hooks.

Lice infest human beings and various other animals.

The *pediculus corporis humani* is the species living on the bodies and clothes of men, is of a dirty white, without spots, and with the sections of the abdomen less distinct than in the next species. They lay a great number of eggs, and the gen-

erations succeed each other with remarkable rapidity. Their wonderful multiplication in some cases, causes a disease denominated *phtheiriasis*, or the lousy distemper. I have heard of several examples of it in our own age and region. The production of such swarms, and their rapid renewal, have led some naturalists to suppose they were formed, without regular parentage, from the elements by an equivocal operation.

The *pediculus capitis humani*, or head louse, infests the hairy scalp, more especially in children; is ash coloured, with brown or blackish spaces where the stigmata or breathing holes are situated; lobes or sections of the abdomen rounded, but more prominent than the preceding. Our native Indians eat lice; so do African negroes, Hottentots, and monkeys, whence they are *phthreirophagi*. These insects have been employed medicinally against suppression of urine and jaundice.

The *pediculus pubis*, inhabits the hairy neighbourhood of the sexual organs, and occasionally colonizes the arm-pits and the eye-brows; has a roundish and flat body, short corselet, almost confounded with the abdomen; the four posterior feet very strong; the bite is acute. Is the *morpion* of the French.

The *pediculus mammiferorum*, means the other creatures of this family, which infest the bodies of land-quadrupeds, such as camels, horses, buffaloes, asses, tigers, and others.

The *pediculus avium*, is a species infesting birds. It is probable however that every quadruped and every bird, nourishes a different species, which can only be accurately determined by additional observations.

Hither must be referred the flea, (*pulex,*) one of whose species the *penetrans* is the *chigoe* or *jigger*. It has been questioned whether this animal ought not to constitute a different genus. Insinuating itself under the nails of the toes and the skin of the heels, it soon causes a troublesome tumour by its numerous laying of eggs in the flesh of those parts. The hatching of these gives rise to a malignant and ill-conditioned ulcer, hard to remove and sometimes fatal. The negroes who

suffer most from these invaders, possess the greatest skill in extracting them; frequent washing, especially in water impregnated by tobacco and other acrid plants, is considered the best preventive.

The order Orthoptera furnishes a numerous and troublesome family of parasites. Though confounded in a great degree by Linnæus with the Hemeptera, and by Geoffroy with the Coleoptera, they form a distinct order, whose individuals have bodies less hard than the latter; the wing-cases are soft, half membranous, intersected with lines, and mostly do not unite at the suture by a right line; the wings are folded lengthwise and mostly after the manner of a fan, divided by membranous lines. The jaws always terminate in a horny piece; they chiefly undergo the half metamorphosis.

To this order belongs a family of insects consisting of many species; it is called *ricinus*, and they all, with but a single exception, infest birds.

The Ricinus family has been within a few years, new modelled by Professor Nitsch, and together with some of the pediculous family of Linnæus, and of the Nirmus of Herman, distributed into a number of additional genera and subgenera.

I. His first genus is called PHILOPTERUS; all the numerous individuals of which are parasites upon the bodies of birds; and upon a very great number of the species belonging to the feathered tribes.

(a) The first subgenus is the *docophorus*, which infests all birds as far as information goes, with the exception of the gallinæ and columbæ, the poultry and pigeon tribes.

(b) The second subgenus is the *nirmus*, consisting of many species, and infesting the birds of almost all families.

(c) The third subgenus is the *lipeurus*, whose numerous species inhabit birds of the gallinæ and grallæ orders; web-footed water-fowl, and diurnal birds of prey.

(d) The fourth subgenus is the *goniodes*, whose numerous species inhabit the gallinæ and columbæ.

II. The second genus is the TRICHODECTES, whose species and individuals inhabit the bodies of mammiferous animals, more especially the *ferœ*, or beasts of carnivorous appetite, and *pecora*, or those which chew the cud.

III. The third of these genera is the *liotheum*, whose numerous species inhabit the bodies of almost all sorts of birds; they are found in company in the same society and on the same birds, with the philopterous parasites; from which, nevertheless, they are very distinguishable, by the quality among others, of invading the hands of the persons who touch the birds when alive, or immediately after death.

(a) The first subgenus is the *colpocephalum*, inhabiting birds, especially the accipitres, picæ and grallæ.

(b) The second subgenus is the *menopon*, whose species infest many kinds of birds.

(c) The third subgenus is the *trinoton*, which is remarkable for tormenting geese and the anseres.

(d) The fourth subgenus is the *eureum* in two species, infesting swallows and hirundinous birds.

(e) The fifth subgenus is the *læmobothrion*, inhabiting falcons, vultures, coots, and as is supposed, ostriches.

(f) The sixth subgenus is the *physostomum*, infesting chiefly sparrows and passerine birds.

IV. The fourth of these genera is the GYROPUS, which infests the guinea pig, and creatures of the cavy family.

It is very remarkable in the history of these parasites, that several species of them inhabit one bird. The barn door pheasant, or common cock and hen, is infested by as many as five sorts; and the white falcon, the common crow, the avoset, the rook, and some other species, support as many. The greater part of birds nourish as many as three or even four sorts of these vermin.

Hymenopterous order. The second family of the hymenoptera is called *pupivora*, because many of them inhabit and devour the pupæ or larvæ of other insects, particularly of the lepidopterous order, so injurious to gardens and farms. These

devourers of moths and caterpillars, form the important family of *ichneumon*, whose females deposit their eggs under the skin or in the body of the chenille, where they are nourished, and in due time hatched, exhausting and eventually killing the larva or caterpillar in which they reside. The destruction thus made is prodigious, and the ichneumon may therefore be considered as one of the best friends of the rural cultivator.

The small insects called *chalcides*, on account of their brilliant metalic hues, penetrate the eggs of other insects, and feed there. They also prey upon the *larvæ of the lepidoptera*, and contribute powerfully to prevent their pernicious overgrowth.

The larvæ of the *crysis*, another genus of the hymenoptera, distinguished by brilliant and splendid colours, hatches in the nests of the mason, or solitary wasps, and in those of some other hymenoptera; where they devour the larvæ of these insects respectively.

The *ceraphron destructor* is the parent of that larva which preys upon the larva of the *cecidomya* of wheat, the *tipula tritici viridis et vivi*, commonly called the "hessian-fly;" thus acting as a high and mighty belligerent power, protecting the farmer against a very formidable enemy.

The entomological order of DIPTERA contains some very troublesome parasites. These insects have two wings only, mostly covering two bodies behind and beneath, termed balancers or halters. They have six legs, and mouth adapted to extracting and conveying fluid matter. Many of them are very injurious to man and other animals by sucking their blood, and depositing their eggs in some part of their bodies. They are the *antliata* of Fabricius.

Among the dipterous insects doing mischief by their larva, is a species of MUSCA, called *carnaria*, on account of its fondness for dead flesh. It is *viviparous*, and its larvæ are laid, not only upon meat and carcasses, but in wounds and sores of men and other animals, which thereby become alive with maggots.

The goad-fly, or ŒSTRUS, is a memorable family of this

order, which annoys other creatures by making their bodies the deposite of their larva.

It belongs to the fourth family of the diptera, according to the arrangement of Latreille and Cuvier, denominated *athericera.* It is memorable that few of them are eaters or devourers of flesh, when in their perfect or imago-state. The family comprehends the genera of *conops*, *œstrus*, and the greater part of the *musca* of Linnæus.

As the œstrus lays its eggs upon the body of several herbivorous quadrupeds, the parent insect must be sought in the woods, whose pastures afford the principal support. Each species of œstrus is usually a parasite of the same species of mammiferous creature, and selects for placing its eggs, the part of the body which especially suits its larvæ, where they are destined to remain until they are ready to hatch in the form of crysalis. The kine, horse, ass, rein-deer, other deer, antelope, camel, and hare, are all known to nourish these larvæ. It has been latterly stated, that man himself sustains one of the species.

Those œstruses are divided into three sections, the *cervical*, attacking the head and neck; the *cutaneous*, nestling in the skin; and the *gastric*, infesting the alimentary canal, more especially the stomach.

To the first division belongs the *œstrus ovis*, infesting sheep. The larva inhabits the frontal sinuses of these animals, and causes the disorder known by the name of the round-a-bout, or *vertigo*. The female parent lays her eggs on the interior margin of the nose, during which the sheep is greatly agitated, strikes the ground with its feet, and runs about with its head depressed. The larva occupies the frontal and maxillary sinuses, fixing itself to the membrane, which lines them, by means of two strong hooks with which its head is armed.

Another œstrus is said to infest similar parts of the cervus tarandus, or rein-deer.

And another species to insinuate itself occasionally into the frontal and maxillary sinuses of human beings.

The œstri *which nestle in the skin* are of several species, to wit:

Œstrus bovis, whose egg, deposited in the skin on each side of the back-bone or vertebral column, enlarges to a larva, denominated a *warble*. They may be squeezed out of the tumour by a skilful hand, a short time before they hatch.

The *œstrus equi* is a creature of this genus, which is reputed to infest the horse in a similar manner. Another œstrus infests the skin of the rein-deer; yet another the same parts of the antelope; and yet another the skin of the hare. Other quadrupeds are reported to suffer similar attacks, and as is supposed, by different species. Their history requires further and more minute investigation. Humboldt relates that certain indians of South America have their bellies covered with small tumours, produced, as he supposes, from the larva of an œstrus. The ass and the camel, among others, are reputed to be sufferers in the same way.

The third division of the œstri, whose larvæ occupy some part of the *alimentary canal*, are, among others, the following, that is to say:

Another *Œ. equi*, whose parent insect denominated the *nit-fly*, buzzes about the legs, shoulders, and sides of horses, and deposits its eggs or nits on the hairs, to which it fastens them by a glutinous substance. As the animal licks and bites itself, the nits or eggs are conveyed into the stomach where they change to larvæ, called *bots*, and adhere by hooks to the inner coat. After having lived there the desired time, they detach themselves, pass down the alimentary canal, and are voided with the dung; after which they assume successively the forms of crysalis and imago. The distinguished veterinary surgeon, Mr. Bracy Clark, whose interesting work on these animals was presented to our library by our late worthy and lamented colleague, James Clements, states as the result of his diligent researches, that *bots* are serviceable to horses, instead of being injurious, as has been commonly supposed.

The *œstrus hæmorrhoidalis*, another parasite of the horse,

proceeds from eggs laid by the mother-fly on the lips of the creature; whence they are conveyed to the stomach, where like the preceding they live a prescribed term, and are voided per anum.

Another parasite of the horse is the *œstrus veterinarius*, whose parent is supposed to deposit her eggs on the margin of the anus, whence they are conveyed into the rectum, and inhabit the intestines, and even reach the stomach.

Another genus of the dipterous order is the *hippobosca*, composing a family otherwise called *pupiparous*, because the mother insect detains the egg in her body until it is transformed into a pupa or larva.

According to the method of that great entomologist, M. Latreille, the hippobosca family is divided into three sections, viz:

1. Such as have wings, distinct eyes, antennæ in the shape of tubercles, and a filament on the back; such is the *hippobosca equira*, attaching itself to horses and kine, usually under the tail, and near the fundament.

2. Those which differ from the preceding by having antennæ in the form of plates, velvetted and projecting. Several species inhabit different birds, whence they have been called *ornithomyæ;* among them are swallows, titmouses, and vultures, as also sparrows, red-tails, and some others. The leading species is that denominated *Hippobosca avicularis* in the system of nature.

3. There is another division of the hippobosca comprehending such as are destitute of wings and have no distinct eyes.

To this belongs the *hippobosca ovina*, or common *sheep-tick*. concealing itself among the wool, and found in numbers on the skin and fleece, when they are sheared.

Another species is reported as infesting the deer by Latreille.

Besides these pupiparous parasites, there is another which, although arranged by Linnæus among the *lice*, or *pediculi*, has by his successors, been constituted a new genus under the name

of *Nycteribia*, by Latreille, and *Phthiridia*, by Hermann. These insects have neither wings nor halters, and have a greater resemblance than the preceding to spiders. They live upon the *vespertilio* or bat; to which they seem peculiar.

V. ZOOPHYTES compose the fifth class of parasitical animals.

These creatures are distinguished generally by a more simple or less complicated organization, than the arachnides, insects, and crustacea. Various and manifold as is their structure, they agree in one point, which is, that their parts or members are not arranged by pairs, but disposed around an axis, and upon two or more rays, or along two or more lines extending from one pole to the other. Even the intestinal worms themselves, have at least two tendinous lines or two stringy threads, proceeding from the collar around their mouths; several of them have four suckers around a prominence, resembling a trump; and, notwithstanding some irregularities, there are always traces of the radiating forms, and in a number of the intestinal worms, there is a distinction of sexes. They have neither a system of vessels, nor even tubes for a partial circulation; they have no organs for respiration; their bodies are mostly elongated or depressed, and their organs disposed longitudinally. Their nutritive system is such as to throw them into two great divisions, one of which is furnished with an alimentary canal, and the other is destitute of such an organization. It is doubtful whether they are furnished with nerves.

They are the ENTOZOA of Rudolphi and the Zoophytes intestinaux of Cuvier. Few or none of them are known but as the inhabitants of the bodies of other animals; they can neither live nor propagate any where else: they are found not only in the stomach and intestines, but in the hepatic ducts, the cellular membrane, and in the substance of the most protected viscera, such as the liver and brain.

1. The *Intestinaux cavitaires* have an alimentary canal floating in a distinct abdominal cavity, with a mouth and arms.

2. The *Intestinaux parenchymateux* have bodies, in whose

parenchyma there are ill-defined viscera, often showing vascular terminations, and sometimes none at all.

The first order of the intestinal zoophytes, called *cavitary*, comprehends the following kinds, to wit:

FILARIA, from its resemblance to thread, has a considerable resemblance at the first glance, to the gordius or hair-worm, of the class annelides. Is found mostly in the cavities of animals that have no external communication, in the cellular membrane, in the substance of the muscles, and in the parenchymatous structure of the viscera; exists occasionally in parcels or prodigious numbers, wrapped in a sort of capsule; inhabits the bodies of insects and their larvæ: seen occasionally in fruit, such as the apple. The most famous species is the *F. medinensis*, the medina or guinea worm, very common in hot countries, under the human skin, especially of the legs, where it has been known to acquire the length of ten feet; may, it is said by authors, remain quiet for years; but when it stirs or grows uneasy, causes severe pains: when one of the extremities appears through the skin, it must be carefully seized and wound upon a quill or stick, and thus gradually and gently extracted; infests birds, as the falcon, owl, raven, and stork. Long ones have been found in the bodies of crickets, beetles, and other insects. Their distinctive character is to have a pointed and hooked tail. Distinct from the Filaria, is the

HAMULARIA, which, in addition to a general resemblance, differs by having the anterior extremity furnished with two small filaments, apparently for the purpose of absorbing nourishment. The H. *subcompresa* of Rudolphi, is found in the lungs of men labouring under consumption.

The TRICOCEPHALUS or hair-head, is known by its round body, big behind and slender forward, and about two inches long. One of the most common inhabitants of the large intestines in man; and in certain diseases, multiplies beyond account: it also torments brute animals.

From this is very properly distinguished the OXYURUS, or sharp-tail, in which the posterior end or tail tapers away very

small. Of this the only known species, the *O. curvula*, lines the intestinum cæcum of the horse.

The CUCULLANUS, or hood-worm, has a round body becoming slender behind, and the blunt head covered with a sort of cowl; is found only in fishes, of which the C. lacustris, infesting the perch, pike, and some others, is a leading species.

The OPHIOSTOMUS, or snake mouth, has a body much like the foregoing, but has a transverse mouth cleft into two sections, resembling lips. The only species is the *O. cystidicola*, which inhabits the air-bladder or vesica natatoria of certain fishes.

A very important family of these vermin, is the ASCARIS, which has a round body tapering at the two ends, a mouth furnished with three fleshy passillæ, and a short tube springing from the midst of them. The genus is very abundant of species, and these are found in almost all sorts of animals.

Those which belong to man, 1. *A. vermicularis*, distinguished by its subulated tail, and by the skin very finely crenated along the sides of the body: inhabits the intestines of children, even of new-born infants; more especially the rectum. Is viviparous. The vessels of the animal are spiral, lacteous, and transparent. 2. *A lumbricoides* having an obtuse, or subincurvated tail, the orifice of the anus transverse, and the intestine orange coloured: inhabits the intestines of men, more especially of the weakly; sometimes penetrating the pancreatic duct: easily distinguishable from the earth-worm by the absence of bristles and of the fleshy belt; the σιρογγυλος of Hippocrates, and the *lumbricus teres* of others.

Those which infest the other mammalia, are found in the intestines of bats, seals, dogs, in the kidneys of dogs, in the guts of wolves, foxes, tigers, cats tame and wild, martins, under the skin of the lion, and in the lungs and kidneys of the martin; in the guts of the polecat, glutton, mole, mouse, goat, calf, horse and hog; has been found in the lungs of the boar, about a span long; and in the guts of the horse, a foot and a half in length. They infest birds too, such as the guts of the ea-

gle, hobby, kite, hawk, parrot, crow, raven, swan, duck, coot, gull, stork, bustard, peacock, dunghill cock and hen, pheasant, partridge, pigeon, lark, starling, thrush. They infest reptiles also, such as the intestines of the tortoises, lizards, toads; the lungs of toads too, guts and lungs of frogs. They infest fishes too; in the guts of eels, codfish, blennies, perch, sticklebacks, catfish, trouts, pike, herring, (the seminal vessicles of herrings, of the size of a horse hair, an inch long, and hanging out into the intestine,) argentine, goby, ray, shark, and lophius.

Ascarides infest worms, being found in the lumbricus, under the skin and among the fluids; very small, with a subulated tail, and two rows of darkish dots, discoverable with the microscope.

Ascarides adhere to the inner surface of the guts or places where they live by means of the triple valve with which their heads are furnished, and by the aid of which they extract nourishment. There is a distinction of sexes, the female being known from the male, sometimes oviparous, sometimes viviparous; and the uterus is divided into two horns, (bicornis.) There is much room for further observation.

STRONGYLUS.—Body round, elongated, pellucid, smooth, globoso, truncated-forward, with a circular opening, having a ciliated margin; behind, the body in the female is entire and acuminated; in the male, dilated into very pellucid, loose and separate membranes, resembling a purse.

1. *S. equinus* lives gregarious in the stomach of the horse; the male pale yellow, a yellowish very subtle membrane, investing the interanea; the tail triphyllous. Among the membranes, there proceeds from a papilla a single dart, fortified with three laciniæ annexed, or a hook with two stings, each tricuspidated. The vessels enwrapping the intestine of the female, are filiform and white. 2. *S. ovinus*, infesting the guts of sheep.

3. The *strongylus gigas* (Asc. visceralis and renalis) grows frequently to the length of two or three feet, and to the thick-

ness of the little finger, often occupies the kidneys of animals, such as wolves, dogs, martins and men, rolled up, and destroying its parenchymatous substance. This animal occasionally takes possession of other viscera, making in them terrible havoc. Being one of the most troublesome of the worms infecting horses, it sometimes penetrates into the blood vessels, and causes aneurisms; is found also in the ass and mule. The worms preserved in my museum, as taken from the ventricle of a dogs heart, are probably of this species.

Hither may be referred the fact recorded by F. Hopkinson, Esq. in the American philosophical transactions, of a snake living in a horse's eye. The animal was probably a strongylus, which was bred there.

A zoophyte of this class, differing chiefly in the form of its sucker, from the ascaris and strongylus, is the *liorynchus*.

The *prionoderma* (called tœnia lanceolata, by Chabert, and polystoma tœnioides, by Rudolphi) grows sometimes to the length of six inches, and inhabits the frontal sinus of the dog and the horse.

The *lernœa* is a zoophyte which anchors itself, as it were, by a horny shank and flukes, in the skin of fishes. One of the most remarkable is the *L. pendula*, (if it is not a new genus,) which hangs down like a bobbin from the side of our mossboncker, or *clupea menhaden*.

The NEMERTES, consists of a single species, the *N. borlasii*, growing to the length of four feet, and living upon anomias, and perhaps other molluscas, along the coasts of Lower Brittany and Cornwall.

The second order of intestinal zoophytes, called parenchymatous, includes the ensuing sorts, viz :

Echinorynchus; body round, with a proboscis cylindrical, retractile and echinated. In the mammalia, found in abundance in the guts of Greenland phocæ. The E. GIGAS, is the great gut-worm of fat hogs; from 12 to 18 inches long; is very white, with a variegating proboscis without a neck; seve-

ral rings of hooked prickles, and seven rows of sucking papillæ; also is found in the intestines of the whale.

Fasciola, the fluke with its several subdivisions of *caryophyllus*, *festucaria*, *distoma*, *tristoma* and *polystoma*. Has a flattish body, with one or more pores. The *F. humani* is that which infests the human species. The *F. hepatica* is found in the liver and gallducts of sheep, kine, hogs, horses, deer, goats, &c. and also in the intestines of foxes, badgers, and several others.

Infests birds, such as hawks, owls, pies, ducks, herons, and blackbirds; torments reptiles such as frogs and salamanders; vexes anates in the guts of the tame duck; the *F. anseris* in the large intestines of the tame grazing goose; infests too the intestines of the heron and crane. Among reptiles a species of F. lives in the intestinum rectum of the black salamander, and another species in the lungs, liver and intestines of frogs, and even sometimes under the integuments of the belly. Among fish, they are frequent in the stomach and intestines of a great many species. There is a remarkable species of the *fasciola*, found in the common clam, or *venus mercenaria* of the New-York coast.

Tænia; body flatted, jointed, head furnished with four sucking bladders.

Head armed with a double crown of vaginating hooks capable of exsertion and retraction.

(a) Inhabiting other viscera than the intestines, with a bladder at the posterior extremity, called hydatulæ; vesicariæ; viscerales; hydatigenæ; T. visceralis, is the human hydatid of the liver, placenta, dropsical sacs, and other morbid tumours in the human body. T. cellulosa, forms in the cellular membrane, and among the muscles.

Among the mammalia, hydatids of this sort have been found in apes, cats, foxes, badgers, bears, sloths, rats, mice, hares, deer, goats, sheep, cows, hogs, and others. T. cerebralis, infests the brain of staggered sheep. T. globosa, infests the lungs, livers, and abdominal viscera of hogs. T. finna, in-

fests the cellular membrane of swine, causing meazly pork; species found too in lizards, serpents and trouts.

(b) Inhabiting the intestines only, without a terminal sac; T. solium, the gourd-seed, or solitary tenia of men; Saxons and Dutchmen. T. vulgaris, the connected tænia of the Swedes. Among the mammalia, infests dogs, wolves, foxes, cats, squirrels, and many more, as also many sorts of birds and fish.

Head unarmed; T. lata is the common kind infesting the human guts. T. dentata is another species inhabiting the human guts also. Various species are found in the intestines of other mammalia, birds, reptiles, and fish, to a great extent.

Physicians have divided Hydatids into two species, 1. The *true*, and 2d the *spurious*. The *true*, they observe in the human species adhering to the liver, spleen, or mesentery, and is supposed to have no further connexion with the body than as it furnishes a nidus, and possesses an independent vitality. The *spurious*, they say, is attached to the kidney, uterus, ovaries or placenta, and presumed to be a mere morbid alteration of the structure of the parts. But these are the distinctions of mere dissectors, who were unacquainted with the principles of science. An hydatid consists of a transparent or semi-transparent bag, uniformly round and smooth, containing a clear fluid capable of coagulation. The common colour is white, but they are occasionally of a pale amber; the bag is composed of two laminæ, and possesses a good deal of contractile power. They are commonly unconnected with each other, or with the cyst which contains them; but sometimes they have been said to enclose each other by regular involution, like a nest of pill boxes; on the inside of the hydatid, smaller ones are occasionally found, usually not larger than the head of a pin, but sometimes bigger than a gooseberry. These are attached to the larger hydatid, either at scattered irregular distances, or so as to form small clusters; and they are also found loose floating in the liquor of the larger hydatids.

Hydatids were accurately described by a German named Hartman, in 1685, and found by him to possess a power of mo-

tion. His paper may be seen in the Miscel. Natur. Curios. Dec. 2. Ann. 4. Tyson an Englishman, described them in the Philos. Trans for 1692, apparently without knowing what Hartman had done. Tyson described the hydatid as he found it in sheep; observed the neck and mouth, and saw it move; indeed by putting hytadids in warm water, he beheld the whole body in motion. Pallas, in his Miscellan. Zoolog. afterwards examined them very minutely, and from a discovery that their mouths resembled very much those of the tænia,he named them tænia, with the specific term of *hydatigena*. Fontana also observed them in sheep; saw the smaller ones adhering to the sides of the larger, or parent bag, and also with the microscope examined the heads of them, and said they resembled those of the tænia. Baillie delivers a clear opinion that the hydatids of sheep are animals : they have been seen to move when taken out of the liver and put into warm water, and they retain their individual motion many hours after a sheep has been killed. John Hunter admitted the hydatids found adhering to the fat about the kidneys of sheep to consist of a mouth, neck, and oblong spherical body. The mouth he says had not the cruciform appearance of the mouth of the tænia, but was merely a simple longitudinal aperture ; the neck was composed of rings, and there appeared very fine circles surrounding the body. They varied in size from that of a chesnut to that of a turkey's egg : when put into warm water, though ten or twelve hours after the sheep was killed, they moved briskly, with a kind of peristaltic motion all over the body. Each hydatid was lodged in a separate sac, which was little more than sufficient to hold it, for the neck was reflected upon the body ; the sides of the sac were lubricated with a mucous fluid.

By analogy, the human hydatid is presumed to be animal too, have nearly the same organization of a cyst of coagulable lymph, containing the hydatids attached or swimming about. They infest the liver, and destroy life, with symptoms of encysted dropsy. They sometimes burst into the alimentary canal and are discharged by stool, to the number of one thousand,

from the size of a pea to an inch and half in diameter. When formed in the kidneys, they have been discharged by urine; the urinary passages are dreadfully disordered in this case. Hydatids have so filled up the pelvis as to cause a fatal suppression of urine. Hydatids have been discharged from tumours in various parts of the body. (Phil. Trans. vol. 25.) Hydatids occur not unfrequently in the placenta, and cause miscarriage; or if there is no abortion, the fœtus disappears as if absorbed or eaten up. Hydatids have been coughed up from the lungs by hundreds; sometimes they are vomited up and discharged from the stomach by the mouth.

According to the most modern classification, however, the family of tænia has been subdivided into the *tricuspidaria*, *botryocephalus*, *floriceps*, and *tetrarynchus*.

The HYDATID too, under the name of *cysticercus* and *cœnurus* has been separated from Tænia, and constituted into a distinct genus, comprehending various species, as they appertain to different animals.

Among the parasitical zoophytes, must be placed the ill-formed and mis-shapen masses of organic matter described by Dr. James S. Stringham, in 6 Med. Repos. p. 261 to 265, with drawings from nature. They were discharged from the alimentary canal by a woman, after suffering a long and severe disease. They were numerous, three and a quarter of an inch long, buckler-backed, and furnished with many tentacula. These odd figured things approach nearest to the queer delineations in Cuv. Regn. Animal. vol iv. pl. xv. and called *chondracanthes*. Ib. p. 36 and vol. iii. 64, 65, where, as Crustacea, he thinks they ought to stand.

Lastly, the SCOLEX, is a zoophyte with a round body, accuminated behind, very contractile, and ending forward with a variable head surrounded by suckers; is generally small, and infests the bodies of certain fishes.

REVIEW.

ART. I. ESSAYS *on* FEVERS, *and other Medical Subjects.* By THOMAS MINER, M. D. and WILLIAM TULLY, M. D. pp. 484. Middletown, Conn. 1823.

THERE is probably no subject which has afforded a wider scope to the arguments of the sceptical opponents of the healing art, or to the raillery and sarcasm of ignorant declaimers against its professors, than the continual vacillations and changes which the treatment of diseases has undergone in the hands of physicians in different ages and countries. The charge of uncertainty in its principles and deductions, and of blindness in its votaries, has been reiterated against the science of medicine with a plausibility of argument that has triumphed equally over the reflecting mind of Rousseau, and the acute understanding of Napoleon. This is not, however, the place in which to refute the calumnies, or expose to merited contempt the unphilosophical errors of Pyrrhonists. Suffice it to observe, that independently of that imperfection which medicine, in common with every other human art or discovery, derives from the allotted fallibility of man, its laws rest on principles the most certain and fixed; that the revolutions which it has suffered have not been the result of any inherent defect in the science itself, but the natural consequences of changes in the moral, political, and physical condition of man, and the progress and extent of his knowledge; that, with the improvements in general science, the progress of medicine has kept pace, and that with the approximation of the former to perfection, the stability of the latter becomes every day more secure, and the ac-

cordance of its theory with its practice more general and uniform. Within the last half century there has been the most decided testimony given to the truth of these propositions, and, if we do not too fondly flatter ourselves, the era of medical glory is fast approaching.

That the treatment of fevers more especially should vary at different times and in different places, can excite little surprise in the mind of any person who reflects that fevers themselves are constantly presenting themselves under different aspects, and that this diversity does not seem to depend solely upon the agency of manifest causes, but upon inexplicable and secret influences, which have at various times produced as various theories, and necessarily modified the practice of enlightened and observing physicians. Without intending to assert that the subject has attained to that degree of improvement of which it is susceptible, and which is necessary perhaps to silence clamour and contention even among the faculty, we do express it as our firm conviction, that fevers were never, at any former period, treated upon principles so broad and generally applicable to all their various forms, and that their treatment has never been attended with so much success as at the present day. Exclusive doctrines, inculcating plans of treatment which had in view some one critical evacuation, on which the cure was mainly supposed to depend, are now wholly exploded. The sweating, the purgative, the depleting plans, have all seen their day. These no doubt were to a certain degree successful; the mildness of disease in some instances, the vigour of the constitution, or the fortuitous coincidence of the state of the disease with the indications in others, favouring the partial treatment of the theorist: but a more extended view of the animal economy, assisted by a more correct knowledge of the means of cure, and of their modes of operating, have introduced more liberal and general ideas in the treatment of diseases. Names have lost much of their weight, and the state of the system is more regarded when an enlightened practitioner prescribes,

than the carrying into effect any preconceived specific plan of cure. Bleeding, mercury, and tonics, are now no longer indiscriminately employed ; but they are combined or employed in succession, or omitted according to the stage of the disorder, the strength of the patient, and the peculiar character of the prevailing epidemic. Mercury, more particularly, has obtained reputation on the one hand, and on the other, encountered opposition and abuse to a degree that testifies to its great powers, and leads us to indulge the belief, that when its action is more generally understood, and properly assisted either by evacuation or stimulation, as circumstances may require, it will be found the most safe, efficacious, and general solvent of fevers.

To recommend calomel in moderate and purging doses in the early treatment of typhus fever, is the more especial object of Dr. Miner in the first essay of the book before us. We are somewhat surprised to observe that Dr. M. claims originality for himself in this practice. We are well aware that it may appear invidious to dispute such claims, on which the imaginations of their authors have fondly dwelt, and which their ambition has perhaps, identified with the success of their labours. Criticism, however, must perform her task, and the prize be awarded or withheld, as justice, not the feeling of kindness, dictates.

We would then, in the free spirit of inquiry, ask Dr. M. in what his treatment virtually differs from that followed by those authors whom he denounces as the advocates of indiscriminate bleeding, purging, &c. ? Dr. M. himself seems to have anticipated this question, and as his answer explains his views on this subject very fully, we shall take it as our text in the consideration of his plan of treatment.

" It may be asserted that this (practice of purging with calomel) does not vary very materially from the well known plan of treating the patient with moderate doses of calomel after bleeding, purging, vomiting, etc. But with little attention it will be readily seen to be essentially different, as that practice presupposes, that the disease will run its course, and only aims at modifying the morbid

action. Besides, most of those who adopt it, appear to be ignorant of the necessity of immediately following it up with tonics after the morbid action is changed. They often continue the mercurial course through the disease, producing an artificial state, in many instances, as unmanageable as the original affection." p. 28.

Dr. Miner here assumes it as a fact, that practitioners who accompany the use of calomel with venesection, etc. necessarily presuppose that the fever cannot be arrested in its progress, and that they therefore aim at a mere modification of the disease, the unchecked progress of which they tamely contemplate. Now it is rather a singular assumption, to convert practitioners with their lancet in hand and their hundred grains of calomel into Stahlians, whose only remedial indication was the *ars expectandi.* But passing over this oversight, is it a fact that these physicians do not aim at arresting the progress of fevers at their onset? Armstrong, after expressing his opinions on critical days in fevers, and in typhus more particularly, says, "Yet I am fully persuaded that the simple typhus may often be cut short in the very commencement; though when it has existed unchecked for a few days, I am equally confident that its course can only be moderated; and it is of great practical importance to bear both these truths in recollection, that we may not be too inert in the beginning, nor too active in the progress of the disease."*

Now to what more Dr. M. aims at, let his own words prove.

"With skilful management we usually obtain a complete resolution, and thus break up the disease immediately." p. 25.

Again,

"An important reason of occasional failure, is that we are not called sufficiently early; as it is well known that after the two first days of the preparatory stage, there is no certainty of success in producing a resolution, &c. p. 30.

Here we see the same object kept in view both by Dr. M. and Dr. A. in their early treatment of fever, and both expressing the same opinion with respect to the term in which

*Armstrong, p. 91.

a solution of the disease may be effected. Now as to the means. Dr. Armstrong informs us in a short but lucid account of calomel and opium, that, "in idiopathic fevers, in those fevers in fact which commence without any decided signs of topical inflammation, and which advance under a continual excitement, calomel should be given from the first *as a purgative*, determined to the bowels by some other auxiliary," &c. And further he says, that, "In continued fevers, &c. the most certain and shortest way of procuring the specific, is through the *purgative* effects of calomel."

Surely Dr. M. could not have read this author attentively when he asserts, page 29, that he does not know the fact, that the alterative counteracting process is accomplished after purging. Dr. Miner may however still object that Armstrong and the authors who treat typhus in a similar way, employ blood-letting in the greatest proportion of cases, whereas he reprobates this practice. To the cause of this difference, he has himself given us a satisfactory solution. He expressly states, in his account of the diseases on the river Connecticut, that from the year 1807 down to the present day, there has been no case of sthenic fever, and that the few hot cases which he has seen, have been sub-putrid, not sthenic. Now this circumstance sufficiently accounts for the omission of blood-letting in Dr. Miner's practice, without establishing any difference between the principles and indications he pursues, and those of the men against whom he declaims. The great object with Armstrong and with every practioner of judgment, in the employment of blood-letting, previous to the administration of calomel, is to remove that high excitement, which, where it prevails, resists the agency of the medicine. But that this is the very view entertained by Dr. M. we find proved by the following opinion which he advances.

"In highly sthenic diseases, calomel will not produce its alterative effects till the system is first thoroughly reduced by depletion and evacuation." p. 24.

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* Armstrong p. 386.

Again: in cases where there is any constitutional debility, venesection is condemned by Armstrong, with the same decisive arguments as those employed by Dr. Miner. Let it be observed that in adducing the opinions of Dr. Armstrong, we have been actuated by no other motive than that of convenience to ourselves, because we do not by any means consider that author the original proposer of the doctrines he so ably elucidates. We have good reason to believe that they had their origin in this country; certain it is that Rush was the first who systematically inculcated them in his writings, and to whom the great improvements in these points of practice are mainly attributable. His febrifuge, consisting of calomel, nitre, and tartar emetic, is undeniably the model of Dr. Miner's remedy employed for the same purpose. The substitution of opium and ipecacuanha is sufficiently accounted for by the circumstance of a difference in the diathesis of their respective patients.

But if Dr. M. does so far virtually coincide with his predecessors in his early treatment of fevers, he differs widely from them in his method of *invariably* supporting the system, after the use of calomel, by stimulants and tonics. This practice we are aware is followed to this day by many who ridicule the Brunonian theories, without having the talent of exposing their fallacies, or of adopting a more efficient and decisive practice. The indiscriminate employment of tonics in fevers, particularly after a proper early medication by calomel appears to us a solecism not easily explained by any argument we can suggest, excepting that all the cases which have ever fallen under Dr. Miner's inspection, have been of the low and cold species of typhus. In these cases we concede that tonics are indispensably necessary, sometimes from the very commencement. But in cases of an opposite nature, or of simple and regular typhus, we do contend that where the early treatment is proper, and not carried beyond a certain *point*, the system is enabled to regain its own energies, and needs not the support of artificial stimuli. To the neglect

of this rule, many a relapse and a renewed congestion of some previously deranged viscus has been owing. The authority of the first writers of the present day will bear us out in this position, and our own experience, not only in typhus, but in other fevers, and likewise in dysentery, and in the phlegmasiæ, fully confirms it. We admit with Dr. Miner, that "exceptions do not form the rule;" but the rule and its exceptions in Dr. Miner's experience appear to have been the reverse of those which it has fallen to our lot to examine.

Having thus freely discussed the merits of our author's principles, we think it but justice to Dr. Miner to say that his treatment in general seems to have been very successful, and regulated by sound practical views. He advises calomel to be used early, mixed with any mild syrup, but not in the form of a pill—from two to five grains to be administered every two or three hours till sufficient catharsis is produced.

"If possible, the calomel should be given in such doses, and at such intervals of time, as to be retained in the stomach and bowels *twelve hours* before it produces its operative effect. But if catharsis does not take place in eighteen hours at farthest, it must be assisted by castor oil or some other mild vegetable purgative." p. 19.

Diaphoretics, as pediluvium, warm drinks, fomentations, sinapisms or epispastics, are advised as the local determinations require. In cases of violent pain in the head Dr. M. directs a blister to be applied to the forehead. Cold affusion was rarely indicated in Dr. Miner's practice, as the heat was always at the natural standard, and often below it; but he thinks that it is highly useful in cases in which the heat is above the natural standard. Where the catharsis, after the use of calomel, inclines to be excessive, opium, and where it is sparing, a vegetable laxative, is recommended. The advantages, which, according to Dr. Miner, attend the use of calomel, are, 1st. that it is the most convenient medicine that can be administered; 2d. that it is liable to the fewest accidents, in which respects it is evidently superior to cathartics, emetics,

or the sweating plan; and 3dly, that it is the most powerful as well as the most safe means of breaking up a disease, and if it fails in this desirable object, of moderating its course and preparing the system for subsequent support by bark and tonics. The following quotation will fully explain Dr. Miner's theory of the action of calomel:

"There is something *peculiar* and specific in the operation of calomel, differing from every other remedial agent; and the more slow in its operation to a given point, the more obvious is this difference. Its effect upon the stomach, small intestines, lungs, liver, spleen, pancreas, &c. have long been well known and acknowledged, and either from these causes, or something not yet ascertained, its counteracting effect at the access of febrile diseases, under suitable management, is preferable to every other article. Its moderate use, in small doses during the first stages of fevers, for the purpose of changing action and preparing for a subsequent supporting and tonic course, has long been established, and rests on the highest testimony. When any important viscus is particularly affected, its employment is generally indicated beyond dispute. No one article so certainly *counteracts* and lessens morbid action, equalizes the excitement, and prepares the patient for the use of tonics. Judiciously used, it overcomes the irritability of the stomach on the one hand, or moderates the torpor on the other, which would otherwise prevent their successful employment, and produces a favourable state of the skin and excretory organs." p. 23.

We coincide with Dr. Miner in this view of the action of calomel, with the limitation before expressed—that we believe it, in ordinary cases in which the strength is not too much exhausted, all sufficient to counteract the disease, and finally extinguish it without a necessity of resorting to a supporting plan.

The objection which has often been raised by many, that the cure of a disease after mercurials does not result from the treatment, but is a mere consequence of the mildness of the disease, and would have followed any other plan of treatment, is indignantly met by our author.

"That such a confessedly Herculean counteragent as calomel, though, at the same time, it is perfectly safe and manageable in skilful hands, can have no instrumentality in effects which seldom or never occur without medication, and which rarely occur from other plans, is—impossible!" p. 27—8.

With equal spirit Dr. M. encounters the usual objections made against the use of mercury by those who argue from the abuse of the remedy in chronical disorders. The majority of those who fall victims to such affections belong to a class whose morals or habits are so irregular, that any medicine might by them be brought into disrepute. Dr. M. asserts that "in regular practice, he never met with a case of permanent injury from mercury, except among patients of this description." With respect to salivation, we beg leave to call attention to the following opinion expressed by our author:

"Salivation, however, is a much more *rare* occurrence than is commonly supposed. If the management of the physician is, in any degree, dexterous and judicious, it does not at any rate take place in one instance out of many hundred. But if it did occur in one instance in ten, and, by means of it, so great a number were saved from the dangerous consequences of Fevers, what rational objection could this afford to the practice?" p. 39.

We have no doubt that many dogmatists will start with surprise at the assertion, that salivation is not necessary to the cure of a disease by mercury—but we believe, notwithstanding, although it is of more frequent occurrence in general practice than Dr. M. intimates, that cases daily occur in which the efficient use of calomel in disease is not necessarily preceded or attended by salivation. It is a well known fact that ptyalism is not rarely produced by other medicines, and moreover, "the mere irritation of calomel in passing the mouth and fauces" often induces this symptom, without however relieving the system or counteracting the morbid action.

We omit any further remarks on the supporting plan of treatment on which our author so strenuously insists, recommending to our readers an attentive perusal of the volume;

and the adoption of Dr. Miner's practice in all cases that are asthenic and attended with exhaustion.

Having devoted so much attention to the first and most important of our author's essays, we are prevented by our limits from noticing the others in the way they deserve. The most important of them, on 'the pulse,'—'crises of fevers,'—'types and stages of fevers,'—'on experience,' &c. are full of practical information, and merit attentive perusal.

The very title of the Essay, "Authors not practical men," seems to us to come with an ill grace from a practitioner, who, as our readers will have already observed, has no slender claims to authorship. But what object has Dr. M. in view in advancing the opinion here conveyed? Is it to introduce doubt and suspicion into the minds of every reader of a medical work? By what plea then would his own statements stand exempted from the injurious consequences of this rule? The fact is, that in combating popular errors on this subject, Dr. Miner has himself fallen into one, and that one surely unworthy of him, when he would throw even the shadow of a doubt on the practical testimony of a Rush—a Boerhaave—a Cullen! Perhaps we differ in our estimation of the claims of a physician to practical eminence. We therefore state that our test of such claims would not be the extent of a physician's practice, nor the number of his patients. Using the words of Richter, "we do not think that the experienced practitioner is formed by the number of his patients. Experience is the result, not of seeing merely, but of reflecting. It is not eating alone, but digestion that gives strength. A physician who tells us that he visits an hundred and fifty and even a greater number of sick people daily, has, in our opinion, so little pretensions to the title of an experienced physician, that we would even deny he had any experience at all." A limited number of sick in a hospital, for instance, gives a man more opportunities for correctly and thoroughly examining into the nature of their complaints, observing the effects of remedies upon them, and of finally

arriving at decisive conclusions respecting disease in general, than it would be possible for him to do if he were hurried from case to case in all the confusion and distraction of an unlimited practice. Besides, allowing full weight to the few instances which may seem to favour Dr. Miner's general position, how many of a contrary nature could we not advance, and those too of men employed both in public and in private practice, as Desault, Boyer, Alibert in France; Cooper, Abernethy, Heberden, Jackson, &c. in England, the record of whose indefatigable labours will long benefit posterity. This is not, however, the only instance in which Dr. M. evinces a disposition to indulge in unworthy cavillings against his brethren of the faculty. A mere difference of opinion is sufficient to call forth epithets not only unbecoming in themselves, but wholly unjustifiable. To exemplify this remark, and withal show the absurdity of the dogmatical spirit that gives rise to it, we observe that Dr. Miner denounces in like terms of reproach, Stahlians, Brunonians, and Rushites. In the same spirit of censoriousness Dr. Miner condemns Dr. La Roche's and Dr. Hale's practice in a manner which we doubt will not be very palatable to those gentlemen, when he asserts that in that part of Connecticut in which he resides, and in which he roundly informs us "there exists the ablest body of practical physicians in the world," they would not only lose their business for their rashness, ignorance, and barbarity, but be amenable to the laws for their shocking malpractice. We may smile at optimism, but we must condemn the dogmatism which will denounce the successful practice of respectable physicians because their experience is at variance with that of the writer. We have no reason to doubt the testimony of Dr. Miner when he informs us that sthenic diseases have not prevailed in his part of the country; and we must even lend our belief to the statement, though we confess it is not very cordially, that even pleurisy and other inflammations scarcely need bloodletting; but we cannot acquiesce in the extension of this statement, that no sthenic

diseases prevail any where. And much less can we permit Dr. Miner with impunity to condemn, as founded in cruelty, ignorance, and audacity, the practice of those, who day after day meet with such cases, and use proper antiphlogistic means in consequence.

We might have expected a little more from Dr. M. in his chapter on the "diseases on the river Connecticut:" an account of the weather, and of such natural phenomena as have occurred ever since the developement of the asthenic diathesis, and of the manners of the people, in short, of all those circumstances which could have thrown light on the subject, and perhaps have added a degree of confirmation to Dr. Miner's views and conclusions, which they must now necessarily want. We would here take occasion to impress upon the minds of our brethren who practise in the country, the advantages which would accrue to our science, and the honour which would be reflected on themselves, from attention to the weather and localities of their respective districts, and from recording the results of their observations, accompanied by an account of the diseases which have prevailed, their method of cure, &c. We shall always cheerfully open our pages for the admission of such information.

Before quitting Dr. Miner, we must take notice of one subject, on which he has descanted with some force, but not altogether without asperity. Dr. Miner considers that one of the causes of the deterioration of medicine in the United States, has been the combination of the two professions of Physic and Surgery. We can neither wholly concur in this opinion, nor are we prepared to dissent from it in toto. The splendid improvements which have attended the efforts of Surgery in this country have undoubtedly reflected a lustre on medicine, by virtue of the alliance of the two branches. It may, however, be questioned, how far the interests of medicine proper, have been in proportion neglected. Certain it is, that interest was the parent of the union, and that policy will for a long time unfit the greater portion of physicians for an impartial investiga-

tion of the subject. Dr. Miner does not however deny the mutual obligation and necessity imposed on physicians and surgeons, of a perfect acquaintance with the outlines of their respective branches, but he insists that one individual cannot excel in both.

"The value of Surgery is by no means overrated in our country, and the favourable station which it holds is the cause of its daily improvement; but while surgery has been justly elevated, the truly discriminating practice of Physic has not received its due share of attention and patronage." p. 136.

"Upon no other subject," says Dr. Miner, "is the public so much deceived in estimating the talents of professional men. Most surgical operations fall directly under the view of the mass of mankind; and it is commonly supposed, that he who can extract a calculus from the bladder, or couch a cataract, has attained to perfection in the healing art. The instance in which the Physician makes the greatest exertion of skill and intellect, as when he cures the most formidable disease by resolution, is entirely out of sight, and is probably never realized, by the patient himself." p. 140.

We shall only remark on this statement, that we think the subject worthy of attention, and offer meanwhile, in support of Dr. Miner's opinion, the sentiments of a physician, to whose masterly knowledge of his profession, and of the duties appertaining thereto, Heberden and Franklin have borne their testimony.

"In large and opulent towns, the *distinction* between the provinces of Physic and Surgery, should be steadily maintained. This distinction is sanctioned both by reason and experience. It is founded on the nature and objects of the two professions, on the education and acquirements requisite for their most beneficial and honourable exercise, and tends to promote the complete cultivation and advancement of each. For the division of skill and labour is no less advantageous in the liberal than in the mechanic arts: and both Physic and Surgery are so comprehensive, and yet so far from perfection, as separately to give full scope to the industry and genius of their respective professors. Experience has fully evinced the benefits of the discrimination recommended, which is established in every well regulated hospital, and is thus expressly

authorized by the faculty themselves, and by those who have the best opportunities of judging of the proper application of the healing art. No physician or surgeon, therefore, should adopt more than one denomination, or assume any rank or privileges different from those of his order."*

We now turn with pleasure to the pages of Dr. Tully, containing an interesting account of the yellow fever, as it occurred at Middletown in 1820, and in Chatham and its neighbourhood in 1796.

Dr. Tully very properly precedes his account of the fever by a short but comprehensive description of Middletown. It does not differ, in any essential particular, from that which we have already had occasion to publish in our pages.† The symptoms are very faithfully detailed by Dr. Tully, but we must for the present content ourselves with giving the following summary of pathognomonic symptoms, or "those which *distinguish it from every other simple fever.*"

"1st. A *peculiar* appearance of the eyes and expression of the countenance, which occur in no other case, and which, however difficult to be described in words, is easy to be recognised by every one, who has ever noticed it with any attention.

2dly. An anxiety and distress about the epigastric region, together with an *irritability* of the stomach, both of which are absolutely sui generis, and strikingly different from the corresponding symptoms of *any other* fever with which we are acquainted.

3dly. One singular early *remission* of all the symptoms, usually between the first twelve and thirty six hours, which terminates the first stage, and is not to be found in *any other* fever." p. 302.

We believe that no person, who has in reality seen this disease, and attentively studied its character and course, will withhold his assent from the identity of the above symptoms with those constituting yellow fever. We would merely suggest to Dr. Tully and other writers who view the

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*Medical Ethics &c. by Thomas Percival M. D. Manchester 1803. Ch p. 2. § VI.

† Vol I. No. 2. of this work.

disease as distinct from other endemic fevers, whether it would not be proper to designate the abatement of the early symptoms by some other name than *remission*, as that seems to imply a return of those symptoms, which however does not take place. Moseley's term 'metaptosis,' we think the best by which to designate the interval between the cessation of the fever and the final or third stage.

Dr. Tully proceeds to notice other *peculiarities* of the disease, distinguishing it from nervous and putrid fevers; such as the suddenness of the attack, the severity of the rigours, the situation and intensity of the pain in the head, loins, and limbs, the muscular strength in the latter stages, and the rapid course of the disease.

"It *differed* likewise *very materially from the remittent fever*, in the deficiency (absence) of any prominent, regular, or essential daily remissions and exacerbations. I speak with more confidence respecting the remittent from having frequently attended *imported cases*. From the consideration of all these circumstances, together with a diligent attention to the principal writers on tropical diseases, I have no hesitation in asserting, that the conclusion is both incontrovertible and irresistible, that if it is not specifically different from all other fevers, in the strictest sense in which the term species is ever applied in nosology, there can be no such thing as distinction of species among any of the common febrile diseases. I would not, however, be understood as contending for terms only. I shall still maintain that for EVERY PRACTICAL PURPOSE, yellow fever is incontestably, a sufficiently distinct, uniform, and permanent variety or form of disease, to be always discriminated with facility, and to require very considerable peculiarities of management." p. 303–6.

When we see such testimony brought forward in corroboration of the experience of the majority of those practitioners who have familiarized themselves with the disease, we are at a loss for language in which to express our surprise that the opinion should still maintain ground, that the remittent and yellow fevers are one and the same disease. Whatever may be thought of this untenable theory, there are few but must deprecate the

treatment to which it has naturally led the way. Of this we shall soon have abundant proof in considering Dr. Tully's treatment, to which we are now called.

1. *Bleeding.*—Dr. Tully asserts, that it was certainly contraindicated in his cases. He thinks that where it does at the very beginning of the disease arrest its further progress, it acts on the same principle 'that the most absurd and unlikely means' occasionally do good. We shall make no comment on the treatment of Dr. Tully, as we are only anxious to give the result of his experience. We would only have our readers bear in mind, that according to both Dr. Tully and Dr. Miner an asthenic diathesis was prevalent at this period in their portion of country.

2. *Emetics.*—"If there is any one point, upon which all respectable authors and practitioners agree, it is in the injurious consequences of emetics of all kinds in this disease, but especially of antimonials.* Though I have never administered them myself, I have frequently had opportunity to witness their ill effects; such as uncontrollable aggravation of the nausea and vomiting, very great increase of the anxiety in the epigastrium, prominent acceleration of the progress and augmentation of the general violence of the disease, together with a heightening of all the putrid symptoms. Indeed antimonials, even in small doses, were *uniformly* pernicious, always increasing the irritability and distress about the stomach, coinciding with all the diseased actions, anticipating, hastening, and aggravating the subsultus, singultus, black vomit, hemorrhages, convulsions, coma, and death." p. 324.

This bold and decisive language is but the faithful echo of that used by Moseley, Jackson, and every English physician of any repute, and of Lining and almost every practitioner of respectability in this country. What adds no little weight to this general opinion, is the circumstance that it is alike en-

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* Will it be believed that any author would, at this day, have the hardihood to recommend eighteen grains of *tartar emetic* in half a pint of water, to be taken after each time of vomiting!—*Reviewer.*

tertained by contagionists and non-contagionists. Let it be noted that the practice of administering emetics is the necessary consequence of the absurd belief we have already adverted to, that remittents and yellow fever are the same disease. No proof more positive of their radical distinction exists, than that observed by Moseley, that emetic tartar, however useful in bilious remittent, is certainly FATAL in yellow fever.

3d. *Cathartics.*—Our author is not inclined to use them as evacuants to reduce the system, but merely to move the bowels.

4th. Sweating seemed to be not only useless, but of disservice. Dr. Tully admits that the pores of the skin should be kept open, but this he seemed to think would naturally follow as the effect of appropriate early treatment.

5th. Cold affusion and in short the antiphlogistic regimen and practice altogether are condemned.

6th. The first object in Dr. Tully's practice, when called early to a patient, and, previous to any medication, was to apply an epispastic to the region of the stomach, and to the back of the neck. If the bowels were torpid, very large doses of calomel simply were administered, and continued perseveringly, till the alimentary canal was moderately but thoroughly evacuated. "Electuary was found to be a much better form than pills for the administration of this article." p. 328. Dr. Tully followed up this treatment with pediluvium, sinapisms to the feet, infusions of serpentaria, or other similar diaphoretics.

After the evacuation of the bowels, opium was *steadily*, resolutely, and perseveringly to be employed, at short and regular intervals, and it was found to allay the remaining pain and irritation and to support the powers of life. Calomel was likewise continued in as large doses as the stomach could retain. The limit to the use of calomel was the appearance of great catharsis, or the affection of the mouth; and to that of opium, the complete alleviation of the symptoms, or trou-

blesome soporific effects. Calomel was never to be continued after the fifth day, and, if used efficiently, or the case was a low one, seldom after the third. In very low cases, alcohol, arsenite of potash, capsicum, tincture of Lytta, the essential oils &c. were found to excite the system to a susceptibility of the mercurial action.

Dr. Tully places the greatest reliance on those tropical physicians who assert that a thousand grains of calomel may be given with safety and with complete success, in this disease.

"Indeed, in one of the worst cases I ever witnessed, four hundred grains were administered in four days without the least inconvenience, but with the best effect in preserving the life of the patient." p. 331.

"Neque pondus hic quidquam, aut mensura determinat, sed morbi levamen."

Opium should be further assisted, on the discontinuance of calomel, by ammonia, ether, or phosphorus, and small epispastics upon the extremities, and "above all, by a regular, continued, and free use of the decoction and tincture of cinchona, conjoined with aromatics." In the latter stages of the disease, where the bowels were torpid, enemata were generally sufficient; but where laxatives were absolutely necessary, recourse was had to castor oil, sublimed sulphur, or carbonate of magnesia. "One drastic evacuation would sometimes sink the patient irretrievably." p. 332.

Coma was generally relieved by opium and epispastics. This treatment was followed in all the ordinary *regular* cases. But irregular symptoms occasionally embarrassed the practice, and necessarily modified the treatment. Where the disease began with diarrhœa, calomel could not be safely used, and epispastics, opium, alcohol, capsicum, &c. were mainly relied on.

With regard to the origin of the yellow fever that prevailed at Middletown, Dr. Tully remarks that Middletown is unequivocally one of the most healthy situations in the Union: that it

is remarkable for cleanliness and the absence of all noxious exhalations from stagnant waters, filth, manufacturing and commercial establishments of any kind. The fever occurred in the healthiest season of the year, and at a time when no other acute disease was prevalent. He then proceeds to state that the majority of the cases were *incontrovertibly* traced to the brig Sea-Island, a foul vessel from St. Jago de Cuba. The disease moreover followed the progress of the Sea-Island, commencing at the mouth of the river, and occurring in whatever neighbourhood she stopped. Finally, Dr. Tully observes, that though the same disease had frequently occurred before, yet it was *always* brought from abroad. Although our author is decidedly of opinion therefore that this disease is imported, still he tells us, he would not be considered as interfering, in the least, with any question respecting the *possibility* of its spontaneous occurrence in our large seaports. Dr. Tully says little of contagion, excepting that "some of the late cases were this year *evidently* contracted from communication with the sick." p. 320. Intending to consider the subject of contagion at full length in our next number, we shall defer for the present any remarks on the subject.

The second of Dr. Tully's Essays contains an account of the Yellow Fever which prevailed at Knowles' Landing, and is the same, with the exception of a few slight alterations, as that published in the second number of this Journal.

The third Essay is a record of the fifteen cases of yellow fever which occurred at Middletown, and of which seven proved fatal, and eight recovered. It does not present us with any circumstances materially different from those mentioned in the report to the Board of Health of this city, published in 1820.

Our author's last essay contains an analysis of Dr. Miller's account of an epidemic fever of Virginia, published in Dr. Chapman's Journal for November, 1822. We cannot take any further notice of this analysis than to observe, that Dr. Tully evinces in it, the same unsparing disposition with his friend Dr. Miner, to condemn venesection and evacuation

generally, however successfully they are employed, or however ably they are defended. If the successful treatment, by these means, of several hundred cases in an epidemic, does not entitle them to the character of being safe and useful, then are we at a loss for a standard by which to test the value of any plan of treatment, and we are compelled to doubt how far Dr. Tully or Dr. Miner are satisfied of the safety of their own method. We hope that neither of these very intelligent physicians will misconstrue our motives in thus freely animadverting upon their opinions of the practice of others. They are mistaken if they suppose for a moment that we undervalue their labours, or mean to throw any reflection upon the intelligence, the ability, and the vigour of thought which they have displayed in the composition of these essays. With the exception of the one fault, to which we have just adverted, we must express our unequivocal approbation of the general spirit and the manly diction which pervade their writings, and which we hope will not fail to inspire our professional brethren in the country at large, to imitate the example of our enterprising friends.

On taking leave of this interesting volume, we beg permission of the authors to urge them to the promised continuation of their essays. We have long known Dr. Tully; and from the ardour and talent which he has evinced, on various occasions, for scientific investigation, we augur most favourably and pleasingly from the continuance of his labours.

ART. II. A FLORA *of the Northern and Middle Sections of the United States; or a systematic arrangement and description of all the plants hitherto discovered in the United States north of Virginia.* By JOHN TORREY, M. D. 1st Vice-President of the Lyceum of Natural History of New-York, &c. New-York. T. & J. Swords, 1823. No. 1. pp. 144. 8vo.

THE natural sciences are but of recent growth in this country, and we seem scarcely to have appreciated their importance

as connected with medicine, agriculture, and the various branches of manufactures; but though, as a subject of general interest, they are much less regarded among our countrymen than with our European neighbours, the number of our native naturalists distinguished for talent and scientific acquirements, is by no means inconsiderable. We are aware of the objection which is generally urged against our literary productions; and we are willing to allow the charge of inaccuracy and want of taste in a greater degree than is to be found in those of European authors: but it would be quite fair to urge, that in countries where science is generally cultivated, the diffusion of wealth, the facility of access to books and cabinets, the assistance of patronage and familiar intercourse with the most skilful masters, impose upon their learned men an obligation which renders imperfection inexcusable; while circumstances of a directly opposite nature which prevail among our scientific countrymen, may very fairly be cited in extenuation of their defects. A very few years since we were entirely dependent upon Europe for men of learning to instruct us, and for books on all scientific subjects, and natural history was a wilderness which it would have been a foolish waste of time and energies to attempt to explore. What wonder then is it that at such a period the skill and industry of foreign hands, should have been permitted to harvest our natural productions? This state of things, however, has entirely ceased; a new era has appeared, and a greater demand and encouragement for scientific works of all kinds is the consequence. The indigenous treasures of our land, in the various departments of natural science are daily coming forth to light. Our countrymen Mitchill, Say, Leconte, and others, are industrious and able gleaners in the different branches of zoology; and in mineralogy, besides many authors of merit, we may challenge a comparison of Cleaveland's elements, with any foreign production on that subject. In Botany, since the elaborate works of Michaux and Pursh, the labours of our native botanists, Muhlenberg,

Bigelow, Schweinitz, and Elliott, have augmented the list of our plants in a ratio altogether beyond our most sanguine expectations, and warrant us in believing, that when the botany of our country shall be fully explored, it will be found to equal, if not to exceed, any country in Europe, of the same extent, in the number and variety of its different species. The latest among our botanists is our fellow-citizen Dr. Torrey, the first number of whose projected Flora of the northern and middle sections of the United States is now before us, and we have no hesitation in expressing our opinion, that as far as it goes, it greatly exceeds in value any thing that has preceded it in this country. It appears too at a moment to render it particularly welcome. From the present state of Botany, the various changes constantly making in systems, the continual accession of new species, and the more accurate determination of old ones, it happens that any work, however perfect and comprehensive at the time of its publication, becomes obsolete in a few years; and a new edition, which should keep pace with the progressive state of the science, would require an entire alteration of its plan and materials. In both these respects, as exhibiting the most recent improvements by the greatest botanists of the age, and as comprising the latest discoveries, and the various notices and observations scattered through many different and often inaccessible publications, the work before us is eminently entitled to commendation. The author has given sufficient proof of his competency for so extensive an undertaking; and if we are to consider the present specimen as a sample of what is to be expected from the completion of the work, we cannot forbear to congratulate the lovers of this engaging pursuit, on the prospect with which they are presented, that the Flora of this country will shortly appear in a dress and character every way worthy of the subject. There has very rarely issued a work from an American press which can compare with it in typographical accuracy, in elegant and tasteful arrangement of the matter, and in the air of neatness and finish which pervade it. But it is distinguished by ex-

cellencies of a much higher order: throughout the whole, the author has exhibited his characteristic habit of accurate discrimination, profound and laborious investigation, and skill in the disposition of his materials. With sufficient of the spirit of *radicalism* to adopt genuine improvements without being trammelled by the authority of great names, he appears to have held constantly in view the established principles of the science, in not innovating except for the purposes of legitimate reform. A greater number of new species are described than we had supposed to have been noticed since the recent publications of Nuttall and Elliott; and the genera have been, in most instances, entirely remoulded from the best authorities. In the difficult tribe of the *glumaceæ*, and particularly in the interesting family of the *grasses*, he appears to have been peculiarly successful; the whole of which have been thoroughly investigated and arranged in a method of the author, embracing the best features in the Agrostography of Beauvois, and the recent and elegant system of Trin. In the difficult task of ascertaining and settling the synonyms of authors, this work will also be found highly useful. The language is in all cases strictly scientific, and the author appears to have been precluded in his design from admitting into his work what are usually termed *popular remarks*, or observations upon the uses or properties of the various plants described. Whether this is to be considered as a defect or not, there will probably be some diversity of opinion. Perhaps the period is not far distant, when this study will be more generally diffused among our countrymen, and a Flora will then be called for on a plan embracing not only all such remarks, but also including the exotics which are naturalized or commonly cultivated among us.

On the whole, the specimen before us, in our opinion, entitles the author to a high rank among the scientific botanists of the present day; and it is recommended to an American public, as the work of a native naturalist who describes the indigenous plants of his native land, generally from genuine specimens, assisted by a profound knowledge of his subject, and

a correspondence with the most distinguished botanists of Europe, and availing himself of the best sources of information with consummate skill and judgment.

Medical and Philosophical Intelligence.

DOMESTIC.

REPORT *of a* COMMITTEE *of the* MEDICAL SOCIETY *of* NEW-YORK *upon a work* entitled, "*Reflexions medicales sur la maladie spasmodico-Lipyrienne des pays chauds, vulgairement appellee Fievre Jaune.* Par J. L. CHABERT, Docteur en Medicine de la Faculté de Montpellier," &c. Nouvelle-Orleans, 1821.

THE frequent occurrence of yellow fever at New-Orleans and its wide spreading ravages, give the medical world a right to expect a vast fund of information on its character and treatment from that quarter.

The work of Dr. J. L. Chabert on the yellow fever of New-Orleans, up to the year 1821, as presented to the Medical Society of New-York, and referred to your committee, is a voluminous treatise of 316 pages. It is entitled, Medical Reflexions on the Spasmodico-Lipyrienne disease of warm climates, commonly called yellow fever, and contains three divisions. The first embraces a full account of the yellow fever; the second consists of a body of long and varied notes; and the third, of a collection of sixteen authentic cases selected from the practical records of eminent physicians with one of his own. This treatise on yellow fever is divided into three parts, and contains twelve chapters, the arrangement of which does not appear regular nor systematic, for we find in it a long essay on the treatment of the disease before we are presented with a division of it into the different classes designated as 1st, 2d, 3d, and 4th class of modification.

That this classification may be of use in the scientific investigation of this disease, we are ready to allow; indeed we think much credit is due to Dr. C. for his labours to this purpose, but in a practical point of view it is worth nothing; for since no case can be designated until it is too late and it has terminated, like all other medical classifications it is more fitted to impede than to favour practical purposes by substituting names for things, creating a routine of practice rather than attention to symptoms, and a neglect of the state of the system and of the pulse; and though the division may be correct, yet the impossibility of drawing the line of distinction at the bed-side, and the waste of time in attempts at it destroy all hopes of its utility.

The 1st class consists of those usually denominated apoplectic cases, and of those of insanity, which survive but a few hours.

The 2d, of those also unmarked with the usual symptoms and terminating in asphyxia on the second or third day.

The 3d, of those running through their course attended with the most malignant symptoms.

And the 4th comprehends mild cases terminating on the 7th or 9th day.

The two last chapters are certainly the best, and that on contagion deserves particular attention as a learned and well-digested inquiry into many facts and instances of communicability of the yellow fever from person to person, which have been alleged by medical controversialists in different parts of the world. The refutation of the contagious attribute is principally attempted by the lucid exposition of local infecting causes, from the atmospheric constitution of seasons and places, and the various degrees of susceptibility inherent in individuals who are perfect strangers to the morbid effects of tropical climates. This instructive chapter is the more remarkable as Dr. C. establishes his doctrine independently it appears from the localities of New-Orleans, and the topography of Louisiana, which are the subject of the subsequent chapter. The details of this essay are convincing enough, however, and establish the causes which have repeatedly exposed the population of that important part of the union to pestilential fevers; it affords also a plan of local improvements which could not fail of

meliorating the condition of a city and soil which contain so many sources of impure exhalation.

The work under consideration, although written by a well-informed physician, exhibits but a limited acquaintance with the medical literature of the United States of America, which the long experience and observations of our physicians should recommend more to the attention of European writers.

Dr. C. however, has been but a few years in the way of this acquirement; it therefore will not be any disparagement of his worth to add, that his mode of treatment of yellow fever, exclusive of the therapeutical means which have been adopted according to circumstances by our practitioners, is not at all admissible and much less justified by experience, in our more northern latitudes.

The notes constitute the longest division of the work, and are twenty-one in number, written without any methodical arrangement; in these the writer enters more fully into his views, and doctrines of the disease and also of the treatment. In No. 1. he accounts for the new appellation given to the disease. He considers it of a purely spasmodic nature, spasm being the proximate cause, and accountable for all the symptoms. He considers the disease as being distinguished from all others by the great muscular strength and small pulse which form the characteristic features, (Note 5) and that these are owing to spasm; it attacks with spasm which forms the first stage of the disease, lasting three or four days sometimes: the second stage is a relaxation of spasm, and for about two days produces, he thinks, a diminution, modification, or change of symptoms: when in the third stage a return of spasm renews the symptoms with increased severity and malignancy, produced by the addition, which he terms accidental, of inflammation of the stomach, which is not necessarily a feature of the disease, but nevertheless from this he derives the additional term leipyrien, as appropriated by Galen to a fever attended by inflammation.

The exciting cause is supposed to be a mixture of marsh and human effluvia, ascribing it to neither separately, but to the two conjoined.

But whatever may be the correct etiology of this pestilence, it is not the province of your committee to decide for the society;

neither does the refutation of the doctrines contained in this work lie with us. This may be more properly undertaken and laid before the public at a season when the errors they contain may be more minutely discussed.

The treatment recommended conforms to the pathological views of the author. The indication being to allay spasm, the remedies are those of an antispasmodic nature; at the head of which stands opium, which is highly recommended. Coffee is also considered a valuable medicine, but the means in ordinary use among American practitioners, are mostly proscribed or detracted from and spoken of in a manner showing considerable ignorance of the proper course to be pursued in the cure of diseases in this country.

Upon the whole, we think neither the pathological doctrines advanced, or the essential means pointed out as useful, can be supported by either fact or argument.

In a note on the quackery practised in Louisiana, Dr. Chabert has given a strong picture of various impositions exercised for want of regular practitioners of medicine in that part of the Union. And not the less interesting is an account of the diseases produced by a habit practised among the slave population, of devouring earthy matter to avoid their tasks, and which destroys many of this miserable class by lingering maladies. The autopsic appearances left by this kind of polyphagia are also detailed at length.

As most of the cases appended to the book are already before the public in the different works from which they have been selected by our own author, in order to support his doctrinal views, they do not require particular attention. It is worthy of remark, however, that they throw no additional light on the subject intended to be illustrated; and it may even be doubted if they be all cases of yellow fever.

Finally,—It is not the first time your committee have read ingenious and instructive books on yellow fever, which we must say, are more numerous from countries happily protected against that scourge, than in those where yearly experience is continually adding to our stock of knowledge. Every one differs from another, according to medical and pathological theories prevailing or adopted in different parts of the world. The book under consideration, is not entirely moulded in the speculative and recent

theories, which chiefly place the cause of disease in the mucous membranes of the stomach and *bowels*. It seems to deviate from them only by exception, whether this system is entitled to the privilege of superseding other systems more familiar to us, may admit of a doubt; but it is a lamentable fact, that we must be deprived of the means of clearly understanding our fellow-labourers in and from Europe, until we have inquired into the truth and correctness of this new doctrine, and placed it by our assent or objections in a proper point of view; that we may declare it authoritative or not, in the exercise of a profession, the importance of which should not cause a loss of time, confusion of doctrines, or the risk of human life.

All which is respectfully submitted,

FELIX PASCALIS.
JOHN BAXTER, JUN.
WM. F. SEAMAN.

New-York, Sept. 6, 1823.

On the Yellow Gum, or Gum Acaroides of New-Holland. By JAMES E. DE KAY, M. D.

An article of the Materia Medica under the above name, is extensively used in the eastern states, and is there considered as a valuable medicine. It is not to be met with in the shops of this city, and indeed seems to be entirely unknown to our druggists.

It is the product of a tree which grows abundantly in the neighbourhood of Botany Bay. This tree is known to botanists, as the Acarois resinifera. The substance under consideration, exudes copiously from every part of the tree. It is usually collected from the soil about the trees, having doubtless run down spontaneously to the ground; hence Tasman calls it an earthy gum lac. As it is not soluble in water, it is undoubtedly a resin, and is known in commerce under the name of Botany Bay Resin. It was first carried to England about the year 1790, and tried as a medicine. Professor Lichtenstein, of Berlin, first gave an account of its chemical properties in Crell's Journal. I do not find in the Medical Journals of this country any notice respecting this resin. The ingenious Kite in 1795 published an essay on this substance, in which he extols its medical properties, and details several cases in which

it was exhibited with remarkable success. It was employed with great benefit in dyspepsia, and removed almost immediately the numerous symptoms of this protean disease. It was highly useful in the debility attending acute diseases, in severe cases of hysteria, cholera, and colica pictonum. In diarrhœa, it relieved the purging and pain when opium had no effect. In incipient dysenteries and in some of long standing, it proved remarkably beneficial. If accompanied with much inflammation, its exhibition was injurious. In spasmodic complaints of various parts of the body, such as stitches in the side and abdominal muscles and in violent rheumatic pains, it has often relieved when opiates in large doses have failed. From White's Voyage to New-South Wales, we learn that this resin is regarded by the natives as a specific in dysentery, and in the eastern states it is highly prized as an agreeable tonic in cases of temporary or chronic debility ; it is usually exhibited in the form of tincture, of which a drachm is the usual dose, exhibited twice or thrice a day. It certainly merits more extensive trials, and will no doubt prove a valuable addition to our materia medica.

Traumatic Tetanus cured by Turpentine.

New-York, September 23d, 1823.

Dear Doctor,

I have lately had a remarkable recovery of traumatic tetanus, from the use of the oil of turpentine, after the remedies usually employed had failed—though given in enormous quantities.

The patient was a very athletic man, with a dreadfully contused and lacerated hand, but without fracture. About ten days after the injury, trismus supervened, when I immediately amputated his fore-arm. No abatement of his symptoms followed the operation. All the terrible train of tetanic symptoms quickly followed—opium, laudanum, bark, wine, cold affusion, warm bath, tobacco, and blisters upon the whole spinal column, failed in giving relief. For several days he took six and seven drachms of laudanum every hour, night and day, without any of the narcotic effects being produced. As his disease had now continued several weeks and appeared almost desperate, we gave him a teaspoon-full of turpentine every fifteen minutes for two hours, when the spasms

completely left him. It was continued at longer intervals until he took twelve ounces, which was given him in thirty-six hours from the time of its first administration.

It produced a violent erythematic inflammation of the stomach and intestines, which was however readily subdued by the proper remedies.

He was, however, completely cured of the tetanus.

Very respectfully,

VALENTINE MOTT.

Dr. J. B. Beck.

P. S.—The particulars will be communicated in a future number of this Journal.

Annals of the Lyceum of Natural History of New-York.—The first number of this work, has just issued from the press. We congratulate our scientific fellow-citizens on the appearance of a journal devoted exclusively to Natural History, and published in a cheap and unostentatious form. The present number contains the following articles, viz :—A Synopsis of the Lichens near New-York, by Abraham Halsey. On the supposed Pumice of the Missouri, by Edwin James, M. D. Description of a new species of Cephalopterus, by S. L. Mitchill, M. D. Descriptions of some new or rare plants from the summit of the Rocky Mountains, by John Torrey, M. D.

Pulmonary Consumption.—Extract from the report of Dr. E. D. Tuttle, Visiting Physician and Surgeon to the State Prison at Auburn, (N. Y.) to the inspectors of the same.

During the year 1822, of eleven deaths which occurred in the prison, seven were caused by consumption.

"It will be perceived that an unusual number of deaths have occurred from consumption during the last year; the causes of which may be sought among a variety of circumstances. The most common existing causes of consumption may be divided into such as act directly upon the body, and such as act indirectly through the medium of the mind. The bodily causes, are such as are seated in the lungs and their appendages. A mal-formation of the chest; adhesions of the lungs to the side, in consequence of

pleurisy or inflammation; a scrofulous habit, and various organic derangements of the viscera, are causes of that disease. The mental causes of consumption are, close application of the mind, long watchfulness, grief, religious fanaticism, and all debilitating passions of the mind.

Fonda, a black man, was confined to the cell two months before his disease made its appearance; Champlin, six months; Conway, seven months; and Baley, seven months. Rachel Clady and Bet Bogart, two black women, were pretty steadily confined for three months, and afterwards allowed the privilege of exercise in consequence of ill health. Baley was consumptive when he came to prison. Champlin and Conway had strongly marked symptoms of scrofula and hereditary predisposition to consumption; and Rachel Clady laboured under confirmed scrofula. Fonda and Bet Bogart, were apparently persons of vigorous constitutions and good health. Previous to solitary confinement, Gardner was a man of feeble and dropsical habit for some years previous to his sentence; so that the diseases of five from the seven who died of consumption, may be accounted for, from causes foreign to the prison. Occult causes, from structural predisposition, or previous organic derangement, may have remotely operated on the other two convicts; but from all that is known in medicine, we may safely conclude that inactivity of the body disposes to debility and local disease. The lungs, the frailest texture of any, compared with their functions, are most subject to lesions that produce death.

There are now in the hospital two convicts from the cells, in an advanced stage of consumption; their healths were good till they had been confined six or eight months. They came into the hospital with difficulty of respiration, and pain in the breast, unaccompanied by the usual inflammatory symptoms that attend the first stages of the disease. We have now *five* cases in which hereditary predisposition, or organic derangement, were perceptible causes of disease; and *four* that were probably produced by solitary confinement.

There may be strong objections urged to this conclusion. It may be truly said, that the greatest majority of convicts confined in the cells, enjoy health in a superior degree to those who labour.

It may be said, that the same persons would have died had they been common labourers *in the prison*, from causes operating through the medium of the mind. This may have been so, and I submit my opinion with diffidence.

That no misconstruction should be placed upon my opinion relative to the consumptive patients, I make the following recapitulation. It is a generally received and acknowledged opinion, that sedentary life, no matter in what form, disposes to debility, and consequently to *local* disease. It may be produced in the study, or the prison; in the nursery and the college, or in any other place where muscular exertion is restrained. If we review the mental causes of disease, we shall probably find, that sedentary life *in the prison*, as it calls into aid the debilitating passions of melancholy, grief, &c. rapidly hastens the progress of pulmonary disease."

FOREIGN.

Dr. Uttini on the Vessels of the Umbilical Cord.—To set the question at rest, whether the placenta and umbilical cord contain lymphatics, as well as arteries and veins, Drs. Uttini and Vegna del Ferro, minutely examined a great number of placentæ. They were injected with coloured waters, and none of it entered either from the arteries or veins. The amnion was found to be separable from the chorion as far as the insertion of the funiculus, and retrograding towards the vaulted surface of the placenta, to form another thin membrane, lining its interior surface, which appeared under the microscope, covered with long shaggy filaments, some of them semi-transparent. In a transverse section of the umbilical cord were also seen, between the umbilical artery and the vein, a round cavity, studded with transparent points, resembling the mouths of vessels, and a viscid substance oozing from them. When mercury was thrown in between the membranes, and slightly pressed with the finger, it entered the funiculus, and when this was divided, it escaped from the transparent points, as from the mouths of transparent vessels. These Dr. Uttini thinks are, there-

fore, lymphatics, and the shaggy filaments their commencement. These, he thinks, join at the beginning of the funiculus ; and where the funiculus ceases, the lymphatics enter the peritoneum, retaining their functions.—*Quarterly Journal of For. Med. and Surg.*

Professor Meyer on the Transition of liquids from the Mother to the Fœtus.—From experiments on pregnant rabbits, Professor Meyer concludes, 1st. That stillicidious fluids, infused into the mother, may be transferred to the fœtus, though he does not deem the point to be quite settled, more comparative experiments being wanted to establish it ; 2d. That the transition takes place by the deposition of the fluid in the cavity of the amnion ; 3d. That the lungs and trachea of the fœtus exhibit no traces of the injected fluid, which proves that the fœtus does not, as Scheel and others maintain, draw the liquor amnii into the lungs. M. Meyer never thought this opinion sound, and explains the appearance of amnial liquor in the trachea of a fœtus, by observing that the fœtus sometimes makes respiratory movements while enclosed in the membranes of the ovum, which may also take place with the mature fœtus in utero, if the circulation be any way interrupted. This, however, is not natural, and may prove fatal to the fœtus.—*Ibid.*

Mr. Broughton's New Experiments on the Nerves.—A series of well conducted experiments on horses and other animals, several of them performed in the presence of Messrs. Brodie, Field, Cutler, &c., have led Mr. Broughton to some very interesting conclusions respecting the functions of the nerves. 1. The fifth pair of nerves is highly sensible, and bestows sensibility to the integuments of the face and lips generally ; and when divided, all sensibility ceases in the parts below the division to which this nerve distributes branches. 2. The portio dura of the seventh nerve is entirely devoid of sensibility, and conveys none to the parts supplied with its branches. It influences the muscles of the face, the cartilages of the nostrils, and the actions of the lips ; for when it is divided all those parts become paralysed, though sensibility remains entire. 3. The par-vagum is entirely insensible. If strongly compressed or divided on one side, the wheezing produced indicates oppression in

breathing; when on both, this increases and proves fatal. 4. These experiments, so far as they go, prove the nerves to have separate properties, and that these are in accordance with the different individual functions belonging to those organs to which their branches are distributed. The experiments incontestibly proved the questioned point as to the sensibility of the eighth pair, and par-vagum.—*Medical and Physical Journal.*

Dr. Von Autenrieth on Syphilitic Inflammation.—Cases often occur in which inflammation appears of an obstinate, tedious, and erysipelatous character, without symptoms of a syphilitic origin, though it may be readily confounded with syphilitic inflammation, particularly where the central ulcer is not sufficiently formed, or too deep in the throat to be discovered. In these cases Dr. Von Autenrieth never met with the following symptom, which, on the contrary, he never found wanting in any case where a common syphilitic ulcer, either large or small, superficial or deep-seated, existed in the throat. This characteristic symptom is a colourless watery froth, consisting of little vesicles found in large or small quantities at the hind part of the root of the tongue. Wherever he found this froth, he was sure to meet with a syphilitic ulcer if ever so hidden. A very close examination at the moment, when, on the root being pressed down, the patient involuntarily attempts to swallow, easily discovers whether the froth be present. By attending to this, the author was never deceived in his diagnosis.—*Quarterly Journal of for. Med. and Surg.*

Abyssinian Remedy for Tœnia.—The leaves and flowers of an unknown plant are said to have been long employed with instant and invariable success in Abyssinia for destroying the tape-worm. Some fragments of them having been procured by Dr. Brayer, who witnessed their effects at Constantinople, were submitted to the inspection of M. Kunth of the King's Garden at Paris, and proved to belong to a new genus in the family of the Rosaceæ, resembling the Agrimonia. It has been named, in honour of Dr. Brayer, the Brayera anthelmintica. It is a small shrub, denominated in Abyssinia *cabotz*. It has branched, downy peduncles, alternate leaves, and quaternate flowers, surrounded with an involucrum. The

Philomathic Society request the attention of travellers to this subject.—*Bulletin de la Soc. Philom. Oct.* 1823.

Diagnosis of Adhesion of the Pericardium to the Heart.—When the pericardium adheres to the surface of the heart, a shock may be felt in the left hypochondrium, succeeded by a manifest depression or drawing in of the integuments. The formation of the concavity is synchronous with the dilatation of the arteries, and the shock with their contraction. During respiration the concavity is deepest, but the shock is feeblest; and the reverse is observed, during expiration. The cause of these phenomena appears to be the connexion of the heart to the diaphragm through the medium of the adhering pericardium, in consequence of which the diaphragm must follow in part the motions of the apex of the heart. When the ventricles contract, (and the arteries dilate,) the heart is shortened, and its point rises, when the auricles contract, (and the arteries also,) the heart is lengthened, and its point descends. The diaphragm opposite the point must follow these motions, and the alternate impulse is communicated to the adjoining integuments. The concavity is deepest during inspiration, because, during the descent of the diaphragm, the apex of the heart is farthest removed from the place it must occupy when the ventricles contract, and the dragging of the diaphragm consequently most powerful. But the shock is weakest, because the auricles which produce it are farthest removed from the part on which the shock is primarily impressed. All these circumstances are evidently reversed during expiration.—*Edin. Med. and Surg. Journal.*

Animal Heat.—Dulong has lately repeated the well-known experiments of Lavoisier and Delaplace upon this subject, chiefly with the view of ascertaining whether the quantity of caloric, developed by the oxygen which disappears in respiration, is equivalent to the quantity given out by the body. He employed for that purpose a modification of Count Rumford's water calorimeter. The result was, that the quantity of caloric disengaged by the conversion of the oxygen into carbonic acid, is equal in carnivorous animals to between 49 and 55 parts in 100, of the heat disengaged by the whole body during the same interval of time; and in fru-

givorous animals, to betwixt 65 and 75 parts; and that the whole quantity of caloric disengaged by the formation of carbonic acid and water together, is equivalent to between 69 and 80 parts only. He thence concludes, that the animal heat is greater than can be accounted for by the fixing of oxygen during respiration, and therefore, that some other source of calorification must exist.—*Journal de Physiol. Jan.* 1823.

Dr. Schlagintweit on artificial Pupil.—At the time that Dr. Schlagintweit published his treatise on the state of the operation for artificial pupil in Germany he promised to communicate the results of his practice with his Iris hook, an instrument calculated for the performance of Corodialysis in a manner approaching somewhat to the operation of Reisinger. In the present essay he has acquitted himself of this engagement, and we proceed to submit it to our readers in his own words.

Of thirty operations on the eye, which I have had an opportunity of performing since my return to my native country, three consisted in the formation of artificial pupils.

The first patient was M. Kilian Gubitz, Prelate of the Chapter of Miederaltaik. In early youth he had totally lost the right eye, and in the left a soft cataract formed about the time I dedicated my treatise "De cataractum origine" to him: this was successfully divided by my excellent teacher Walther, in the summer of 1817. Scarcely however had the patient enjoyed his sight for a month, when an arthritic Iritis took place, and in spite of the best treatment, terminated in closure of the pupil. In March, 1821, I saw the patient, and found the bulb healthy, the cornea clear, excepting at the point corresponding to the operation, the pupil almost wholly closed by a plug of puriform lymph, and the perception of light, but imperfect.

On these grounds, the prognosis was not good, and I proposed the operation only as the means of probable relief, without any risk of aggravating his condition. He gladly consented, and on the 4th of May I undertook the operation. A tolerably large pupil followed the use of the hook, in spite of the motions of the eye, and I then brought out the instrument, together with the edge of the iris, through the wound in the cornea. A small quantity of

blood appeared in the new pupil, but this had disappeared by the following day. On the 9th May the patient clearly distinguished light; and on the 11th, he could discern objects, and speedily, to his great joy, regained a considerable power of vision.

The second case was a leucoma corneæ which extended from its lower segment, and occupied two-thirds of the membrane, so as to obscure the pupil completely. The upper part of the cornea appeared clear, and when the eye was directed downwards, allowed the pupillary edge of the iris to be seen not adherent. The perception of light was perfect.

This being the case, I made an incision a line broad, with a double-edged knife, in the upper part of the cornea, and introduced my iris-hook. The eye being directed downwards, I then fixed the hook, with the assistance of the forceps blade, in the pupillary edge of the iris, and withdrawing the instrument, effected a prolapsus of the iris through the wound in the cornea, without the difficulty so frequently attendant on the single hook.* Vision immediately became perfect, and the patient could see all surrounding objects. On the 9th day after the operation, as no appearance of disease remained, I dismissed the patient to her home at her urgent desire.

The third case was a central leucoma with anterior synochia, the consequence of a neglected inflammation with hypopium and ulcer of the cornea. When the eye was directed downwards, the upper part of the pupillary edge of the iris was seen to be unadherent, whence I resolved on the formation of an artificial pupil; but I soon became convinced that the iris was incapable of any extension from the adhesion of its under part with the cornea, I therefore changed my plan, introduced my iris-hook into the anterior chamber as far as the ciliary edge of the iris, and brought that part of the membrane into the opening of the cornea.

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* It will be seen from these particulars that Dr. Schlegintweit's operation of Corodalysis differs from Reisinger's principally in bringing the pupillary instead of the ciliary margin of the iris into a state of prolapsus between the edges of the wound in the cornea. For a more particular description of the operation and of the instrument we refer our readers to Mr. Guthrie's Treatise on Artificial Pupil, p. 77. &c.—*Ed. Quarterly Jour.*

The new pupil appeared perfect, though partially filled with blood, but on opening the eye afterwards I was chagrined to find that the prolapsus of the iris had escaped from the wound in the cornea, and that in consequence the separated portion of the membrane had been left at liberty to retract to the ciliary ligament. The eye was not injured by the operation, and the patient now awaits the repetition of the Corodialysis.—*Quarterly Jour. of for. Med. and Surg.*

M. Hildebrand on the Russian treatment of Hernia.—The following mode of replacing incarcerated hernia is employed by the Russian peasants. They take a vessel capable of containing a few pints, make a hole in its bottom, and stop it with a cork. The parts about the tumour are then rubbed with oil or soap, and the air in the vessel being rarefied with lighted tow, is placed over the paris like a cupping glass. The abdominal parietes are of course forcibly pulled into the vessel, while the tumour is drawn into the abdomen. The vessel is then removed by withdrawing the cork, and admitting the air. M. Hildebrand has tried it repeatedly with great success, premising blood-letting, where inflammation is present. It cannot be used in cases of pregnancy, dropsy, or much corpulence. The Russians, likewise, employ the same process in uterine hemorrhage, and spasm, which they refer to a wrong position of the uterus.—*Ibid.*

NOTICE TO CORRESPONDENTS.

We are promised for our next number communications from Professors Macneven, Mott, Willoughby, and Doctors Eights, Pendleton, and Tuttle.

METEOROLOGICAL OBSERVATIONS

FOR JUNE, 1823.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM			
1	30 38	30 38	30 40	60	76	61	nw	nw	nw		594	variable
2	30 40	30 34	30 28	65	77	65	sw	sw	sw		600	clear
3	30 25	30 25	30 30	62	82	67	sw	sw	s w		619	do
4	30 30	30 30	30 28	68	86	71	sw	sw	sw		630	do
5	30 22	30 10	30 06	66	92	74	sw	sw	sw		600	cloudy
6	30 18	30 14	30 14	62	76	62	n	nw	nw		600	do
7	30 10	30 04	30 00	65	82	68	n	s	sw	—.03	611	clear
8	29 80	29 84	29 84	62	56	56	nw	n	n	—.29	600	cloudy
9	29 84	29 84	30 04	55	66	54	ne	ne	sw		594	clear
10	30 18	30 18	30 26	66	70	56	sw	sw	se		587	do
11	30 40	30 44	30 44	60	74	57	s	s	s		585	cloudy
12	30 44	30 44	30 34	60	70	68	s	se	se		608	clear
13	30 27	30 18	30 00	62	80	68	s	s	s	—.22	635	cloudy
14	29 99	30 04	30 27	65	90	72	se	nw	n		615	do
15	30 30	30 30	30 26	70	80	69	n	ne	se		614	variable
16	30 24	30 20	30 20	68	74	66	se	se	se		632	clear
17	30 20	30 26	30 29	69	94	76	sw	sw	sw		654	do
18	30 29	30 25	30 25	74	95	78	sw	sw	sw	—.01	656	variable
19	30 25	30 18	30 15	76	92	76	sw	sw	sw	—.06	650	cloudy
20	30 15	30 26	30 20	75	83	68	ne	se	se		644	variable
21	30 18	29 87	29 84	68	82	75	se	s	s	—.05	655	cloudy
22	29 94	30 00	30 05	55	69	57	ne	ne	ne		635	do
23	30 08	30 08	30 00	60	81	58	sw	sw	sw	—.83	646	do
24	30 00	30 00	30 00	64	85	68	sw	sw	sw		662	do
25	30 04	30 08	30 08	70	81	79	s	s	s		665	do
26	30 25	30 25	30 21	69	70	61	s	s	ne	—.14	680	do
27	30 15	30 18	30 18	62	68	65	ne	se	s	—.10	740	do
28	30 18	30 18	30 12	70	79	74	sw	sw	sw	—.01	760	do
29	30 10	30 06	30 10	72	82	72	sw	nw	nw		684	do
30	30 16	30 20	30 20	65	70	61	s	n	n		672	do

The quantity of rain which fell in this month is 1 inch 74—100ths of an inch.

The thermometrical changes in the month of June were very great, and the atmosphere was dense and arid. The rain on the 7th, 13th, 19th, 23d, and 28th, fell in the night. The night of the 12th was intensely dark; at 11 o'clock, thunder, lightning, and heavy rain, for the space of an hour. At 5 P. M. on the 18th, the wind veered from S W to N. E. at half past 5, thunder, &c. and a small shower from a scudding Nimbus; at 7 P. M. wind S W. Vespertine lightning on the 2d, 13th, 17th, and 28th. The sun was obscured on the 30th, and the greatest part of the 8th and 22d.

METEOROLOGICAL OBSERVATIONS

FOR JULY, 1823.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 A M	2 P M	9 P M			
1	30 16	30 10	30 08	62	80	71	nw	sw	w		672	clear
2	30 04	29 94	29 90	69	82	71	w	s	s	—.01	614	cloudy
3	29 90	30 04	30 18	72	88	68	ne	e	se		692	do
4	30 27	30 27	30 24	69	82	69	se	s	sw		694	do
5	30 19	30 10	30 08	69	90	67	sw	s	sw		710	do
6	30 00	30 00	30 04	72	90	73	sw	nw	e		714	do
7	30 08	30 08	30 08	70	78	72	e	se	se	—.26	782	do
8	30 08	30 08	30 08	75	92	72	se	w	w		742	do
9	30 08	30 08	30 08	77	92	76	w	nw	nw		698	clear
10	30 08	30 14	30 14	80	94	76	s	s	s		708	do
11	30 06	30 04	30 04	78	85	76	s	sw	sw	—.31	714	cloudy
12	30 04	30 04	30 04	78	94	78	sw	sw	nw		645	clear
13	30 04	30 04	30 04	76	84	66	nw	nw	nw		634	cloudy
14	30 04	30 10	30 08	69	80	73	nw	nw	sw		630	do
15	30 00	29 98	29 93	75	86	76	sw	sw	sw	—.55	632	do
16	29 93	29 93	29 98	79	80	76	sw	sw	nw	—.14	664	variable
17	30 00	30 05	29 94	70	82	70	cal.	s	s	—.50	689	cloudy
18	29 90	29 88	29 88	68	69	64	e	e	nw	—.58	710	do
19	29 88	30 00	30 06	70	82	66	n	nw	nw		655	clear
20	30 18	30 18	30 18	69	86	68	nw	nw	nw		642	variable
21	30 18	30 26	30 32	71	82	64	ne	ne	e		648	clear
22	30 40	30 40	30 38	70	84	70	e	s	sw		652	do
23	30 38	30 30	30 30	71	85	73	w	sw	sw		642	variable
24	30 27	30 25	30 20	72	84	73	sw	sw	sw		656	clear
25	30 20	30 16	30 00	74	70	64	cal.	ne	ne	—.61	692	cloudy
26	29 90	30 06	30 06	68	85	72	ne	ne	ne	—.04	742	do
27	30 06	30 06	30 18	75	89	74	sw	sw	sw		722	do
28	30 30	30 30	30 26	78	87	76	sw	sw	se	—.09	714	variable
29	30 24	30 14	30 10	75	80	77	se	w	s w	—.32	726	cloudy
30	30 05	30 00	29 97	76	90	75	sw	sw	s w		709	do
31	29 97	29 97	30 00	77	86	74	sw	sw	nw		689	do

The quantity of rain which fell in this month is 3 inches and 41—100ths.

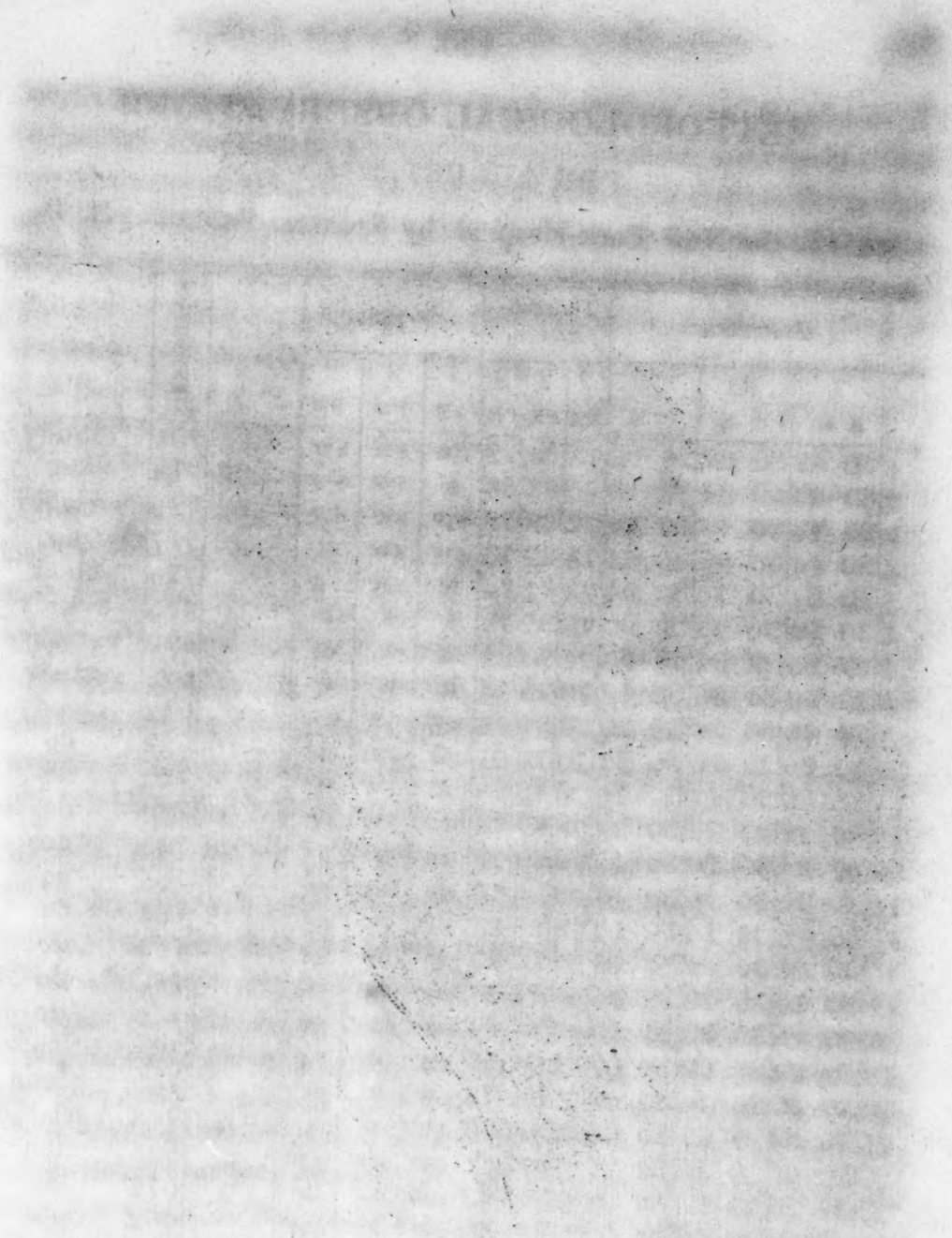
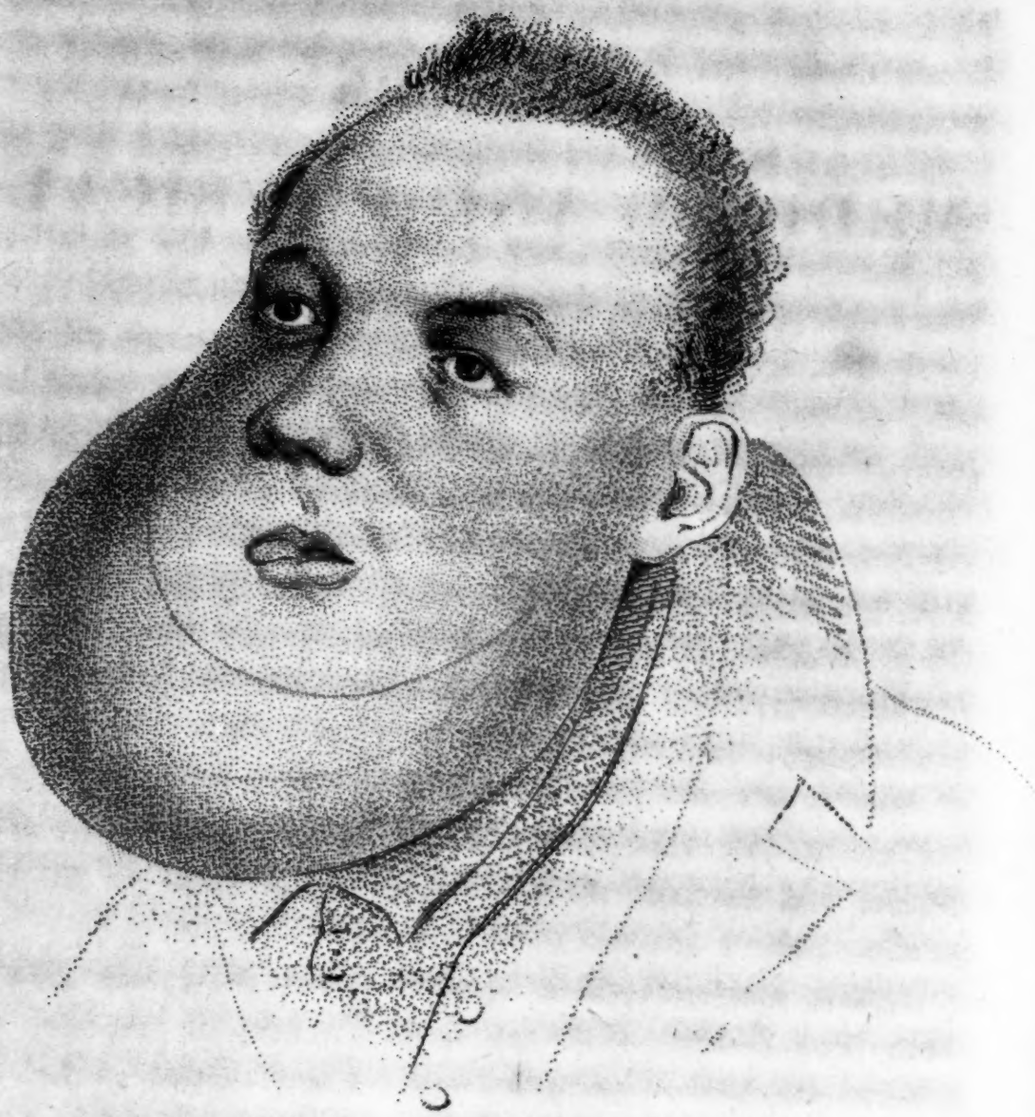
This month was remarkable for heat and moisture; the mornings of the 7th, 8th, 25th, 26th, and 29th were foggy. Thunder, &c. at 4 P. M. on the 2d, and at 3 P. M. on the 7th. Thunder showers on the afternoons of the 11th, 15th, 28th and 29th The sun was obscured on the 18th, and at times on the 2d, and 5th. Vespertine lightning on the 2d, 7th, 12th and 27th. The thermometer on the 9th at 2 P. M. placed in the sun stood at 112° The nights were generally clear and starry. The moon was eclipsed and visible on the night of the 22d.

METEOROLOGICAL OBSERVATIONS

FOR AUGUST, 1823.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM			
1	30 02	30 02	30 02	73	88	72	nw	sw	sw	—.24	704	cloudy
2	30 04	30 04	30 10	75	82	68	s	sw	sw	—.90	714	do
3	30 14	30 14	30 14	72	88	72	sw	sw	sw	—.02	722	variable
4	30 14	30 08	30 04	75	89	73	sw	sw	w	—.02	717	do
5	30 04	30 04	30 04	74	91	74	w	sw	sw		720	clear
6	30 04	30 00	30 00	78	92	78	s	s	s		715	cloudy
7	29 98	29 90	29 90	75	94	82	sw	w	w		692	variable
8	29 90	30 08	30 18	76	96	74	w	w	e		652	clear
9	30 20	30 20	30 20	70	84	76	nw	nw	nw		642	cloudy
10	30 20	30 20	30 20	70	74	67	cal.	ne	ne	—.10	672	do
11	30 20	30 20	30 20	70	78	75	cal.	sw	sw	1.06	722	do
12	30 22	30 22	30 24	76	89	74	sw	sw	sw	—.01	730	do
13	30 24	30 20	30 16	74	84	72	ne	ne	ne	—.09	748	do
14	30 16	30 16	30 16	70	76	68	ne	ne	ne	—.01	756	do
15	30 16	30 16	30 10	70	80	68	ne	ne	ne	—.12	766	do
16	30 05	30 05	30 10	68	65	63	e	ne	ne	—.37	768	do
17	30 10	30 10	30 16	64	75	67	ne	ne	sw		768	do
18	30 16	30 20	30 20	66	82	69	sw	s	se	—.12	768	do
19	30 20	30 20	30 09	71	84	70	sw	w	se	—.58	782	do
20	30 10	30 10	30 08	72	89	73	sw	w	w		765	clear
21	30 08	29 99	30 00	75	84	68	sw	s	s	—.24	743	variable
22	30 00	30 10	30 22	64	73	67	nw	nw	nw		695	clear
23	30 26	30 26	30 38	62	75	64	nw	ne	ne		672	do
24	30 50	30 53	30 53	66	75	63	ne	sw	sw		672	do
25	30 53	30 53	30 48	64	80	61	cal.	sw	sw		668	do
26	30 48	30 34	30 28	64	84	72	sw	s	s		670	do
27	30 26	30 20	30 20	71	90	75	sw	sw	sw		672	do
28	30 20	30 26	30 32	72	92	76	sw	sw	sw		682	variable
29	30 35	30 35	30 32	71	90	69	ne	ne	ne		701	cloudy
30	30 38	30 25	30 14	74	88	76	ne	s	sw		732	do
31	30 10	30 06	30 10	78	97	80	sw	sw	sw	—.12	728	variable

The quantity of rain which fell in this month is 4 inches.

August attracted attention by its dribbling falls of rain. The wind throughout this month was generally light, the weather very sultry and oppressive. Thunder, &c. on the 2nd, 4th, 18th, 21st, and 31st. The sun was obscured on the 10th, 11th, 14th, 16th, 29th, and at intervals on the 9th, 12th, 18th, 19th, and 30th. Vespertine Lightning on the 19th.